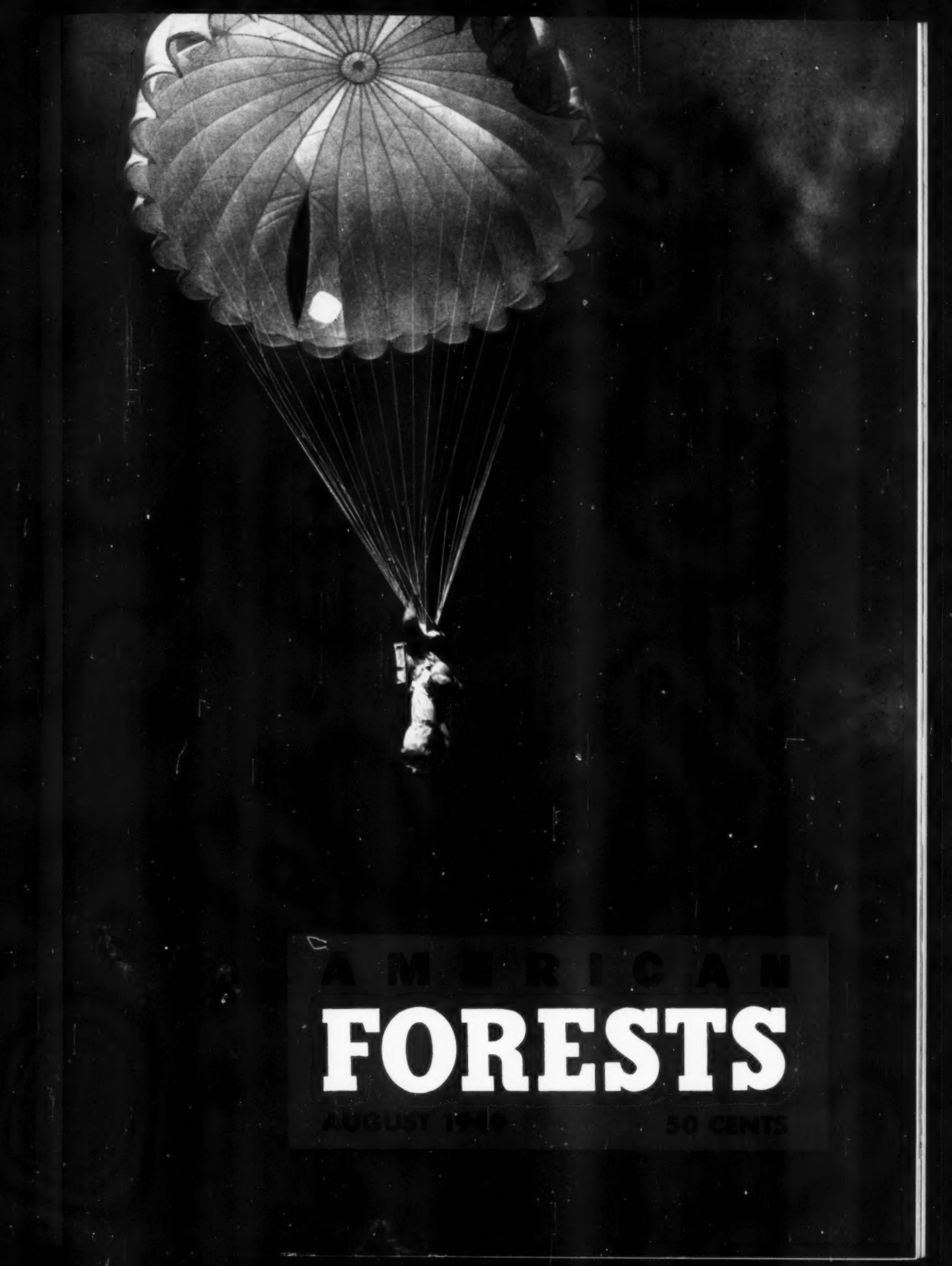


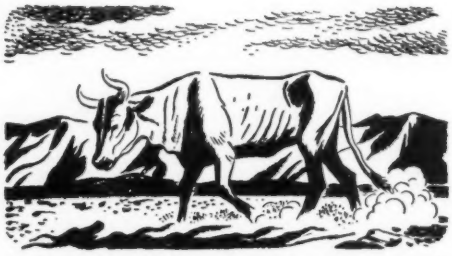
AMERICAN

FORESTS

AUGUST 1949 50 CENTS

MURDER!

Range fires are *murder*—any way you look at them! Here's what they do to this country—your country—EVERY YEAR.



Each year range fires burn millions of acres of land bearing essential grain and livestock feed!

They destroy homes, farm buildings and equipment —sometimes entire communities!

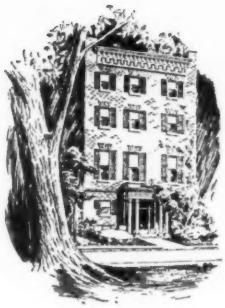
They kill cows, horses, sheep and wildlife!

And, yes, range fires even take a toll of human lives!

*RANGE FIRES **CAN** BE PREVENTED IF **YOU** WILL FOLLOW—FAITHFULLY—THESE FOUR SIMPLE RULES*

1. Hold your match 'til it's cold—then pinch it to make sure.
2. Crush out your cigarette, cigar, pipe ashes. Use an ash tray!
3. Drown your campfire, then stir and drown again.
4. Ask about the law before burning grass, brush, fence rows, or trash.

A Public Service Project of The Advertising Council. Space Contributed by AMERICAN FORESTS MAGAZINE



THE ASSOCIATION

The American Forestry Association is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

AMERICAN FORESTS

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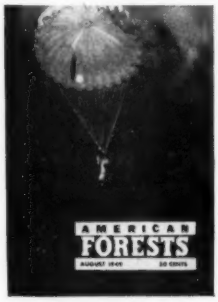

THE COVER

The smoke jumpers are the special attack boys of the U. S. Forest Service. Their specialty is hitting fires quickly by bailing out of planes over western forests difficult or impossible to reach by ground methods of transportation. In this cover photograph Phil Stanley has made a graphic shot of a jumper about to make a "featherbed" landing in a treetop. The chute is an Irvin 28-foot standard canopy with Derry slots to provide forward speed and maneuverability. For more information on these firefighting birdmen turn to page 14.

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LETTERS TO THE EDITOR

They Like Color

Keep color on your cover and you'll attract a lot more readers. The American people respond quickly to natural beauty. Good work—and more power to you.

Ruth C. Moore

New York City

The June cover is about the best thing you have done in the line of improvement. Congratulations—and give us more like it.

Fulton K. Lake

Lynchburg, Virginia

Congratulations on the June issue and especially on the fine color cover. This undoubtedly cost you a nice penny, but I don't know where you could spend that penny to better advantage, the first glance being so important in the decision whether or not to inquire between the covers of the magazine.

Charles R. Ross

Corvallis, Oregon

I would like to thank you for the beautiful cover on the June issue. Every member of our family commented on it—and on how much AMERICAN FORESTS has improved in the last year. Keep up the good work.

Mrs. Robert T. Kent

Berwyn, Pennsylvania

The June cover is great—glad to see AMERICAN FORESTS go to color. While it is expensive, I think you'll find it a good investment. Look what color has done for *Arizona Highways* — for *National Geographic*, for that matter. You're on the right track.

Ray Judson

Chicago, Illinois

I want to congratulate you on the beautiful June issue, especially your new cover. I read AMERICAN FORESTS every month with a great deal of interest—and sometimes with envy.

Gladys M. Keener
Executive Editor
The Scientific Monthly

Washington, D. C.

The June cover does not mean that future AMERICAN FORESTS *covers will be in four color. We would like to oblige but, unfortunately, we haven't that kind of budget. So our policy must remain—color when we can afford it.*—Editor.

Paying Their Way in the Parks

As one who has visited most of our national parks, I wish the article, "The Dilemma of Our Parks," by Newton B. Drury, in your June issue, could be put in pamphlet form and a copy given everyone who paid a registration fee at every national park.

The picture showing trash fished from Brilliant Pool in Yellowstone should be posted on every bulletin board in that park. The best remedy for this sort of thing is not more and more rangers to "ride herd" on tourists who don't know any better, but more and more education applied at strategic points as to what *not to do* with refuse that must be disposed of as well as what *to do* with it.

Concerning money for the upkeep of national parks, I am a strong believer in the principle that those who use a thing should pay for it. Instead of yelling for more and more tax money, there should be a charge made for each tourist in proportion to the length of time he spends and the facilities he uses. For instance, those who travel by automobile should pay fees that would cover their upkeep, etc. The institution of such a system would at first raise a loud howl, but if it were properly presented and explained, the justice of it would be evident and criticism would be squelched.

E. W. Lowe

Lafayette, Indiana

The Best Antidote

I have read A. G. Hall's article (Washington Lookout) and your editorial (—Or Somebody Might Get Hurt) in the June number, and have received other statements opposing the bill (Anderson bill, S. 1820, to regulate timber cutting practices on private lands) in Congress.

The best antidote is a sensible definite program. I suggest your organization, the American Forest Products Industries and the National Lumber Manufacturers Association get together to this end, and to counteract socialistic and expensive propositions. An exception, incidentally, might be need of moderate increase for protection against fire.

Philip T. Coolidge

Bangor, Maine

Credit the Mobile School Board

In the June issue, the comments of George Dean in "Letters to the Editor" prompt me to write about the Mobile County, Alabama, School Board.

First, I think the School Board of Mobile County deserves a lot of credit for keeping intact its 22,000 acres of 16th section school lands. Especially in view of the fact that in many counties, in several states, much of the 16th section land has partly and, in some instances, completely disappeared.

The greater part of the 22,000 acres of school land in Mobile County is primarily suited for growing timber, though some is cleared and leased for farming purposes.

In 1946 the School Board contracted with the State Department of Conservation to make a volume estimate and growth study of its timber. On the basis of this study they hired a technical forester to supervise the management of its lands.

Revenue from timber, turpentining, and other forest products, along with rentals from farming, grazing and other types of leases, will be used for the public schools.

In the future, after the timberland becomes well stocked and high quality timber has been produced by selective cutting practices, the land should produce a good, periodic income for the schools.

This progressive step taken by the Mobile County School Board in having its lands placed under forestry management is the only example I know of, so I felt it might be of interest to you and your readers.

Carl H. Watson

Mobile, Alabama

Worth Emphasizing

In the fine editorial "They Are Seeing Little Trees" in the May issue, there appears an apparent contradiction. In column one it states "the volume of logs cut and man hours of labor employed in the woods have fallen off one-half." Literally true. But in column two, it says "Every thousand feet of logs brought from its woodlands provide eleven hours' more employment than in 1929, the peak year of its big timber days." Also true.

The end result, however, is more employment at better wages than in 1929. Is this not worth emphasizing?

Clyde Martin
Weyerhaeuser Timber Company

Tacoma, Washington

On Mt. Rainier, Logging, Etc.

I am writing in regard to an article appearing in your April issue, "Mt. Rainier Has a Birthday," by Merlin K. Potts. We do not believe this article conveys the correct impression to the American public, and particularly the readers of your magazine.

The picture on pages 14 and 15, bearing the caption, "Logging operations are in progress within a quarter of a mile of the northern, western, and southern boundaries of Mt. Rainier National Park. Within a few years the park is likely to be an oasis in an area of cutover land," shows an area logged by the St. Paul & Tacoma Lumber Company.

The picture was taken immediately after logging, in about 1945. The area is now restocking. There is ample seed source, which the picture indicates. Also, the St. Paul & Tacoma Lumber Company, on its tree farm, is committed to a program of planting wherever it is necessary to hasten natural reforestation. The company has already planted over 7,000 acres of lands which were slow regenerating. This year it has planted 435,000 Douglasfir seedling trees. In the past we have planted as high as a million trees in a year. The company's plans call for taking care of its lands by planting or artificial restocking where natural restocking is slow in coming in.

The caption of the picture indicates a large area of cutover land. It would be humanly impossible to log all the lands adjacent to the boundary of the park in such a way that it would all look like newly logged off lands, as the picture and title indicate. In harvesting a crop of trees, naturally there is a short period when an area looks like the picture presents it. But within ten or fifteen years a new forest will have started which, to the practical forester at least, is far more beautiful than an old snag-topped and decrepit forest.

Understand, I do not intend to convey any idea that the small amount of timber in Mt. Rainier National Park should be logged, but I do want to impress you that the lands Mr. Potts calls an area of cutover land can be and are being so handled by various tree farms and the U. S. Forest Service that they will be in continuous production. I estimate that the average acre in the Mt. Rainier area, under our present system of forest management, will produce approximately 500 board feet a year. This means that every acre is producing, on the average, lumber products to build one new home and back smoke house for writers like Mr. Potts every twenty years. The stability of the community and the nation in their requirements for wood

products requires that this forest land be kept in a productive capacity. This nation is not so rich and fortunate that it can forever leave the land as it found it when it took it away from the Indians.

As to Mr. Potts' article, I want to voice an objection to it. I am sure any thinking man, or I might say any citizen of Tacoma, Seattle, Everett, or Olympia, looks with pride upon its national park (Mr. Rainier), and while its development may not have been entirely satisfactory, 100 percent, to everyone, they still are happy about it. Certainly, the American people all have ideas, and it is a wonderful country where people are not thrown in jail because they disagree with the bureaucrats back in Washington.

In the first paragraph of the article there is mentioned an "insistent and at times bitter struggle" — that, of course, is not true. I do not believe there has ever been opposition to the Mt. Rainier National Park from the community that I mention. As to the third paragraph, where credit is given to various organizations for putting the park through—those of us who have been in the country long enough know that that is not exactly correct. Perhaps the first person who thought of creating a national park out of a lot of wasteland which was in a railroad grant, is the man who planted the first seed. Anyway, that is immaterial. It was the community back of the idea, who knew full well that just the term "national park" had great advertising value and would attract tourists, who provided the real stimulus, and they are still the most jealous and the best boosters for its continuance. I have had the pleasure of personally knowing all the park superintendents. All have played a large part in making the park an institution to western Washington which, I think, 100 percent of the people would be willing to back with every effort. It is these men, together with their assistants, who have served the people, who are entitled to a lot of commendation. Perhaps their work would have been a lot easier, and it is my opinion that they would have accomplished a great deal more, had they not been shackled by a lot of regulations and rules prescribed by the bureaucrats in Washington, D. C.

In the last sentence of the last paragraph the article states that "here and there in our country will remain a few fragments of unspoiled early America." I am wondering if Mr. Potts and The American Forestry Association feel that these fragments mentioned are the only things in America that we have a right to be proud of. What about the prairies that were converted into the American bread-basket? What about the forests of the United States that are now being put on a "timber as a crop" basis? Yes, what about a thousand and one other things—and I will include the AMERICAN FORESTS magazine!

I am sure that an article covering fifty years of the Mt. Rainier National Park's existence, revealing the accomplishments and what the future offers, would delight the American people. We have a fine park. We are all proud of it. We want it to serve the people as a recreation area, and a tourist attracter. We are proud of its past record, and those who serve it in the next fifty years will have opportunity to improve its facilities and further promote its use to the benefit of all.

Norman G. Jacobson
St. Paul & Tacoma Lumber Company

Tacoma, Washington

TREES, NEW AGRICULTURE YEARBOOK, NOW AVAILABLE

The 1949 Yearbook of Agriculture, entitled *Trees*, a 960-page volume about trees and forests, is now ready for distribution, the Department of Agriculture has announced. More than 250 thousand copies are being printed.

The book contains 123 articles by 161 contributors, a sixteen-page section of color photographs, and many other illustrations, the primary purpose of which is to illustrate ways of planting and caring for trees—and how to identify the leading forest trees and ornamentals. The articles are designed to be practical, down-to-earth, non-technical sources of information for farmers, suburban dwellers, city persons, students, teachers, etc.

The book is divided into four main sections — "The Tree," "Trees and Homes," "Forests and Men," and "Lists and Other Aids."

The first section considers trees as living things—an introduction that focuses attention on the individual tree. A feature of the section is a series of questions and answers, based on the inquiries that the Department of Agriculture and the Forest Service have received most frequently over the years.

The second section includes articles on trees for the country home, city trees, shade trees for the Northeast, the Southeast, the Great Plains, the Rocky Mountain area, California, and the Pacific Northwest, pointers on planting shade trees, and keeping shade trees healthy.

In the third section are articles on forest types of the Uinted States, forests and soils, forest renewal, tree seeds, direct planting, production of planting stock, experimental forests, Christmas trees, large private forests and forest companies, the national forests, insects and diseases of forests, forest fires, and forests and watershed protection.

A chapter on small woodlands discusses cash crops from small forests, cooperatives and small woodlands, windbreaks and shelterbelts.

Special attention also is paid to the facilities for vacations and other types of recreation in national forests and other forests. One article deals at length with national parks, another with safety for the vacationist. One sizable division of the book lists recreational opportunities and outstanding features of all the national forests.

Of interest to the home woodworker are eleven articles on wood in use. Six articles discuss woodlands and wildlife, including fish.

Eighteen articles discuss the foresters' profession, sources of help for the small woodlot owner, the history of logging in the United States, the present status of timber supplies, future requirements, the place of forests in the national economy, forests and labor, and a national program for forestry.

WASHINGTON LOOKOUT

By A. G. HALL

A baseball game is never over until the last out. Even more unpredictable than the outcome of the national game is the action of the national legislature. Last month as this column was being written, one could predict with reasonable certainty that H.R. 2296, to provide increased aids to state forestry under the Clarke-McNary Act, would by this time be public law. It was unanimously approved by the House Committee on Agriculture, it had passed the House without a dissenting vote. And a subcommittee of the Senate Committee on Agriculture and Forestry has displayed a very favorable attitude toward the bill.

Indeed, the sub-committee appeared deaf to the opponents of the measure, and in its report to the full committee had made only minor changes in order to strengthen its language. Then the full committee struck out sections which would enlarge the farm forestry program. These were the sections which proponents of the bill had spent most of their effort developing and justifying.

As dealt with by the Senate Committee on Agriculture and Forestry, the Clarke-McNary Act remains unchanged in scope. The bill carries increased funds for cooperative forest fire protection programs from the present ceiling of $9,000,000 to $20,000,000 annually, to be reached in successive stages by 1955. It still carries a graduated increase for procurement, growing and distribution of forest tree planting stock from the present $100,000 authorization to $2,500,000. Under the bill, trees could be distributed to non-farm landowners as well as farmers.

While the committee's report did not state its reasons for eliminating the farm forestry program from the bill, it must be assumed that arguments of opposition were given considerable weight, particularly those of consulting foresters who felt the increased program would be an invasion of the private forestry field. This column reported last month that arguments of the consultants and of the lumber industry against increased federal spending and increased federal influence in state programs were ineffective. So they were on the subcommittee which heard them. But on the full committee they apparently had an effect.

What will happen now is anyone's guess. An attempt was made to pass the amended H.R. 2296 on the Senate consent calendar on July 6, but this failed. If the bill does pass the Senate, the amendments will necessitate its return to the House.

Farm forestry work will receive a step-up in spite of the amendment of H.R. 2296, however. The Agricultural Appropriation Bill (H.R. 3997) carries an increase of $185,500 for farm forestry. This bill became Public Law 146 on June 29.

Other Forest Service items in the appropriation were approved as follows (parenthesized figures are those of the President's budget when they differ from the appropriation): general administration, $655,000; national forest protection and management, $26,300,000 ($26,489,000); fighting forest fires, $100,000; forest and range investigations, $2,818,000 ($2,812,500); forest products research, $1,172,000; forest resource investigations, $866.000; forest development roads and trails, $10,348,000 ($9,752,000); forest fire cooperation, $9,000,000; farm and other private forestry cooperation, $1,100,000 ($814,500); forest acquisition, $401,000; special acquisition fund for Superior National Forest, $75,000 ($100,000); forest acquisition from national forest receipts, $142,000.

In other bureaus of Agriculture: Bureau of Plant Industry, forest diseases, $401,000 ($420,000); Bureau of Entomolgy and Plant Quarantine, control of emergency outbreaks of insects and diseases, $1,745,000; gypsy and brown-tail moth, $575,000 ($601,000); forest pest control act surveys, $750,000 ($1,000,000); white pine blister rust control, $3,645,000 ($3,756,000). Flood control, $9,500,000 ($10,000,000); soil conservation research, $1,400,000 ($1,651,000); soil conservation operations, $50,773,800 ($47,028,800).

Interstate cooperation toward solving a common problem was approved on June 25, when President Truman signed Public Law 129 grant-

(*Turn to page* 40)

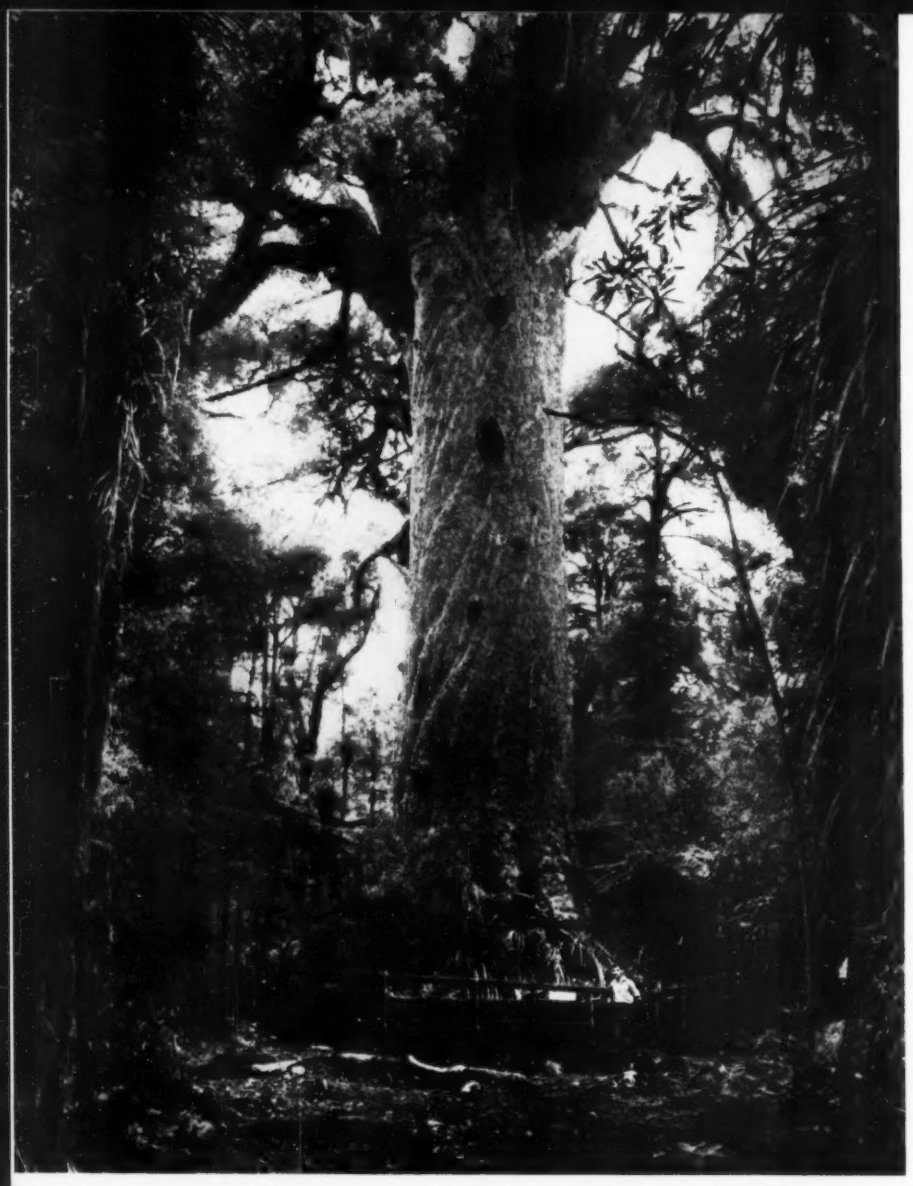


Photo by W. C. Davies, Hon. F.R.P.S.—Courtesy of Cawthorn Institute

Remnant of a great and valuable forest is this giant kauri tree, nearly fifteen feet in diameter and 169 feet high, in Waipoua State Forest

New Forests For New Zealand

Exotic trees, mainly conifers from the Northern Hemisphere, are replacing the Island's valuable kauri and other vanishing native forests

By H. H. CHAPMAN

WHEN the British, by treaty, took over New Zealand in the middle of the nineteenth century, mammoth trees often up to ten feet in diameter, dominated great reaches of forest on North Island, the more equatorial of the two main islands making up this picturesque land in the South Seas. This tree was the kauri. Straight, with trunk clear of limbs and with little taper, which made it ideally suited for spars, it was highly prized by the early sea captains. Later, it was to become one of the most valuable sources of timber in the world.

Today, by and large, the kauri has disappeared from the market. Destructive processes that laid low all but a remnant of the great kauri forests—along with other valuable native timber of New Zealand—have been at work over the years. And by destroying these native forests, man created a new set of growing conditions which favor fast-growing exotics, mainly conifers from the northern hemisphere, over the slow-growing native trees.

Thus while New Zealand is greatly concerned with efforts to reproduce and perpetuate the native forests, or what remains of them, many exotics like our own Monterey, loblolly and slash pines, or the valuable Douglas-fir of our own Northwest, will play a vital if not crucial part in the island's present and future forest economy.

Some idea how far this swing to new species has already progressed may be found in the fact that three quarters of a million acres had been planted to exotic conifers by 1946 in what was called the most extensive planting project in history.

But before looking closely at this and other developments, it is important to go back briefly to 1840, when the British treaty was made and settlement of the islands got under way.

For it was shortly after this that great kauri logs were being dragged to water and rafted to mills at Auckland and west coast points such as Dargaville—the beginning of man's destruction of the native forests.

As viewed and used by the sea captains and the settlers that followed,

The author (left) with C. M. Smith, chief inspector of the New Zealand Forest Service, while attending the Pacific Science Congress in March

the kauri was a magnificent tree with strong, light, whitish wood. Saplings shed their limbs at the thickness of a finger by cutting them off as leaves are cut from hardwood trees by cell growth in the autumn. Hence the trunk, with practically no taper, is free from knots. But on reaching sixty to eighty feet, which tops competing trees and brush, the tree changes its habit of growth and sends out great branches to form a crown resembling that of an oak, but with only sparse tufts of small leaves on the ends of the branches.

Mature kauris reached sizes of six, eight and ten feet in diameter, and one survivor measures fourteen feet through. Yet the bark on these giants was no more than an inch thick. The live inner bark bore a gum called copal, of high value in making linoleum. Notching the bark caused bleeding, and if excessive, killed the tree. Fossil gum could be found in swamps and mined for export.

When the kauri forests were logged, this gum made the slash very inflammable and fires swept over the land completing the destruction of the forest which, under and with the kauri, was composed of other species of trees and shrubs, including tree ferns and dense undergrowth of tall sawgrass. These fires were repeated time and again by settlers to keep down the undergrowth and bring in grass for sheep and cattle. But the soil on these kauri hills lacked fertility. A persistent and widespread shrub called the tea tree, because settlers used its leaves for tea, quickly occupied the burned lands. If not reburned, it grew in a dense thicket until at about twenty years it began to thin out. At this stage, if seed was within a distance to be borne by the wind, kauri seedlings sprang up in the half shade. Growing from one-half to one foot a year, they finally overtopped the tea tree.

Under its own shade, and that of the dense jungle in the mature kauri forest, the small seedlings die in their infancy, unless they find a perch on top of an old stump or down log. Here, with enough light to survive, they have grown to huge trees, supported by great roots. In this way, a few kauri of a second or third generation are retained in a rain forest that otherwise slowly eliminates these giants and replaces them with shade-enduring hardwoods that have, over wide areas, formed a climax forest. As is often the case, this forest is of much lower value to man than the temporary coniferous type represented by the kauri.

Had these great forests of kauri been placed under intensive forest management from the start, it is con-

View of the new forest around Roturua on North Island. In foreground is European larch, with Monterey pine, most successful of the imported conifers, on the horizon. State operated sawmill may be seen in left center

New Zealand State Forest Service Photo

ceivable that by logging and opening them up to tea tree growth, with plentiful seed sources, they could have been reproduced to dense sapling stands of young kauri. Wherever a favorable combination of half shade, absence of jungle ground cover, vicinity of seed trees, and exposure of mineral soil has occurred, and successive fires have been kept out, young stands of kauri have sprung up. But these spots are pitifully few and scattered.

No wonder then that the few areas which have so far escaped the ax and fire are attracting popular interest not only from New Zealanders but as a mecca for tourists. At present a battle royal is being fought to set aside as a national park the last large area, 18,000 acres, on which kauri composes a considerable portion of the stand, and known as the Waipoua State Forest. Although off the beaten paths for tourists, these relics of the original forests are more than worth a trip. The impression made by the first view of *Te Matua Ngahere,* the "grandfather" of the forest, with its spread of more than 100 feet and burden of epiphytes and strange plants, is not easily forgotten.

These remnant stands must and will be preserved, until the slow but certain trend of natural forces finally destroys them, perhaps in several hundred years. Even the redwoods fail in comparison with these strange monsters of the rain forest, which have been described as the gorillas of the woods. Yet, on the Waipoua State Forest, great damage was done at one time by permitting gum gatherers, in a time of unemployment, to operate by bleeding the great trees to death, and even, unsuccessfully, attempting to burn the woods. Due to a rainfall of over seventy inches and an average of 265 days of rain a year, these true rain forests will not burn until opened up by destructive cutting and consequent drying out.

In New Zealand the Monterey pine, native of California, likes the eight to eleven-month growing season. This fifty-year-old tree is 184 feet high

Geoffrey C. Wood

In their natural state they are impenetrable to any but a New Zealand woodsman armed with a four-foot brush knife or slasher. The great kauri, *Te Matua,* remained unknown to the white man until 1925, when a native Maori led the local forest conservator to the tree which stands within 500 feet of a graded modern road that had been built through the heart of the Waipoua forest. A cleared footpath now leads to the tree, and by means of road and path the public now is able to enjoy its magnificence. Anyone seeking to penetrate the jungle, without proper clothes and tools, to look for other trees, would be cut by sawgrass and reduced to impotence.

No damage has resulted from making the forest accessible by the road, and young kauri have sprung up on the exposed earth of the cuts and fills. Foresters of the state service now propose to reserve from further cutting a belt from three-eighths to a half mile wide on both sides of the road. On the remaining area, dead kauri will be cut, overdense stands released to grow and, wherever possible, kauri seedlings encouraged in the openings.

Uninformed citizens, whose only chance to see these great trees has been given by the road and trail work of the foresters, now seek preservation of the entire area, although the belt to be preserved is many times greater than any of them can ever see or enjoy. Whether common sense and sound technical management or emotion will win in the contest over Waipoua remains to be seen.

The same destructive processes that laid low all but a remnant of the great kauri forests operated to decimate several other valuable native timbers. Of these the rimu, known as red pine for its reddish heartwood, was the most widely distributed on both North and South islands. This beautiful tree has fine foliage of weeping habit, and attains complete dominance over large areas, with trees two to five feet in diameter and sixty to 110 feet in height. Its seeds are small berries borne singly on the foliage. Birds eat them and are respon-

Native white pine, or kahikatea, which grows in swamps. This valuable tree has practically disappeared from the forest economy of New Zealand

sible for their distribution and germination as is true of our junipers.

Starting in dense shade, the seedling grows slowly but persistently until after 200 to 500 years it dominates all other species except kauri. Both kauri and rimu may produce yields of 100 thousand board feet an acre in almost pure stands, but are usually found mixed with other species.

Another valuable tree is the kahikatea, or New Zealand white pine, which grew in swamps, producing an odorless white wood, and reaching, in pure stands, diameters of three to eight feet and merchantable lengths up to 100 feet. Easily accessible, these forests were cut clear and the land drained for pastures. Now the tree has practically disappeared from the forest economy of the state.

Several other valuable native timbers, such as the matai or black pine, the totara, the tanekaha or celery pine, the miro, the pururi, a teak relative, and others, originally gave to the Dominion a wealth of timbers for all local uses, including durable fence posts that will last up to seventy years in the ground, ornamental woods for cabinet making, structural timbers for housing, and export material. The volume of these preferred woods was so great that until recently but little use was made of great expanses of pure forests of antartic beech, covering four million acres of mountain slopes, mostly in the South Island.

Yet these beech forests, with trees reaching five feet in diameter, give the greatest hope for future forest management of any native trees. The greater portion of the beech forest will find its chief usefulness as a protection, on steep mountain slopes, against excessive erosion induced by heavy rainfall in humid areas, and occasional torrential downpours on drier slopes, where the soil is a loosely bound shingle deposit termed greywacke.

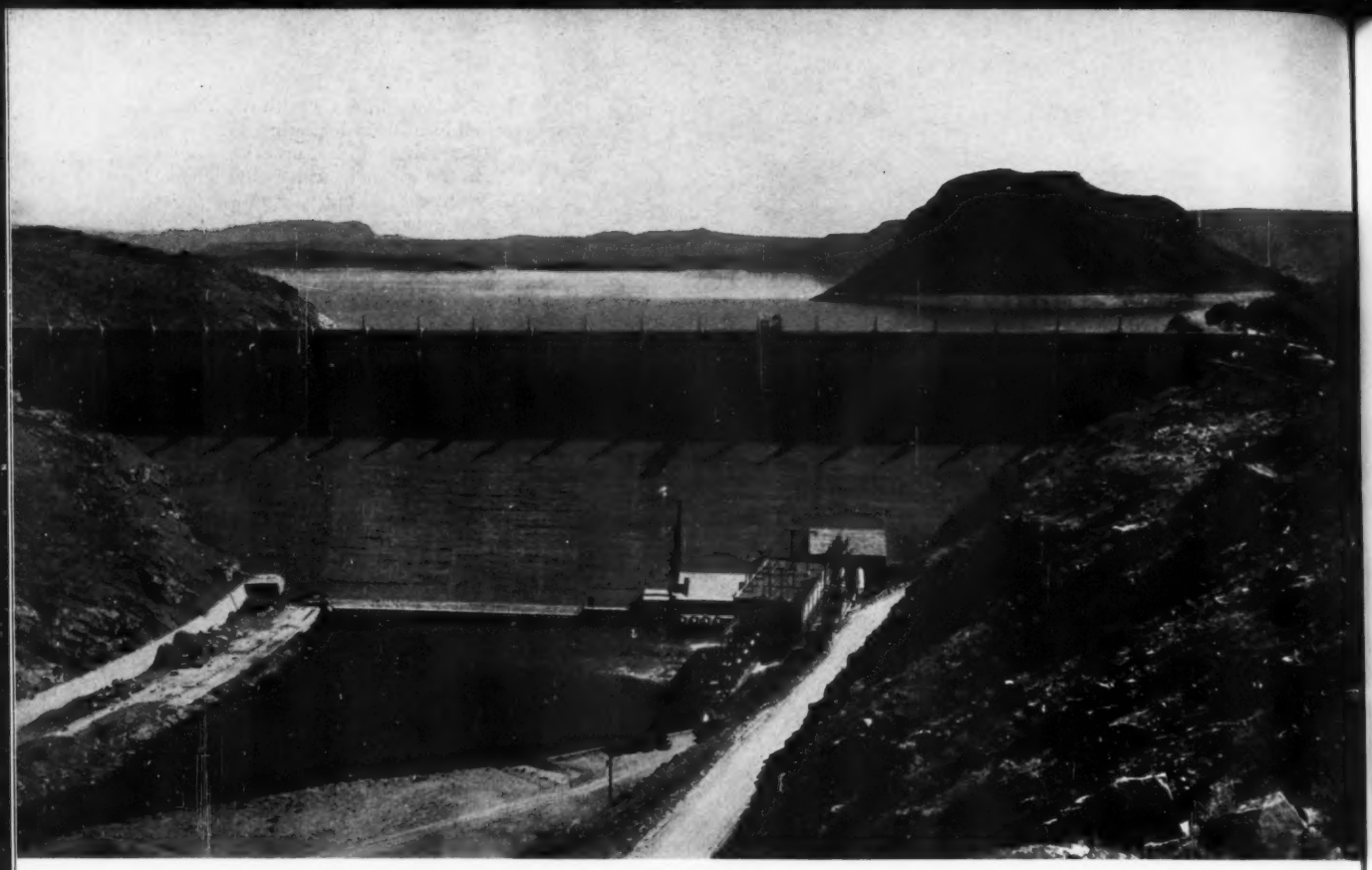
An unusual disaster happened to these beech forests in the Murchison area of the South Island. In 1932 a violent earthquake caused many land slips, destroying the forest cover. But the main damage was caused by disturbance of the roots of the trees. The weakened trees were then attacked by a buprestid borer, and a large proportion of the old trees were killed before a parasite, in turn, disposed of the invader. This indirect damage to a forest by an earthquake is something new in the annals of forestry.

Another grave threat to the per-

(*Turn to page* 38)

Geoffrey C. Wood

Natural reproduction of Monterey pine after logging in Nelson area where plantations, at thirty-five years, yield 60,000 board feet an acre



The Rio Grande drops its load of silt in the lake back of Elephant Butte Dam, built in 1916

Bad Medicine for the Rio

ARTHUR H. CARHART

THE egret colony and the New Mexico ducks which nest on San Marcial Lake in New Mexico, are about to be dispossessed. There is a real likelihood that the important, 56,200-acre Bosque del Apache Refuge of the Fish and Wildlife Service will lose its high value in serving waterfowl. Four lakes with excellent fishing as well as waterfowl values will be turned into mud flats and later degenerate into sunbaked desert.

The Army Engineers and the Bureau of Reclamation are asking Congress for nearly $100,000,000, part of which will be spent in bringing these changes about.

And before the story is all unwound, sportsmen may be contributing their bit in taxes to achieve these results. For if this scheme doesn't pan out the taxpayers of the nation are going to pay the costs.

Perhaps what may happen down where the Rio Grande River winds between desert-ruled hills may not seem too important; the loss of the nesting grounds of the rare New Mexico duck, the destruction of breeding grounds for the Brewster's and American egrets may seem insignificant in the broad national picture. But the projected plans of the engineers are significant to every sportsman in the nation—to every citizen in fact.

For here is a case history which can well illustrate impending disruptions of wildlife habitat in many another projected scheme for which the engineers have made their blueprints, estimates and budgets. They are talking of *billions* of dollars for "flood control" and "reclamation." Just how many *billions* if all their mighty projects are approved and financed by Congress is uncertain. But when this money is thrown into draining, dam building and dredging all across the nation, the impact on wildlife and other resources will inevitably be terrific.

Let's see what "reclamation" and "flood control" mean on this paltry little old $100,000,000 project.

The Rio Grande river rises in a great, horseshoe-shaped, timbered basin in south-central Colorado, flows eastward as a mountain stream, reaches the center of the expansive mountain rimmed San Luis Valley, then turns southward into New Mexico through lava-walled canyons toward Albuquerque.

As it leaves the mountains, the river is crystal clear, the great head-

To end erosion and flood troubles in the Middle Rio Grande Valley, $100,000,000 worth of dams, dredging and draining are now prescribed. But this is only a poultice—the cure lies in rehabilitating watersheds at a fraction of the cost

waters basin being in protected national forests. From the time it turns south, the tributaries that sluice into the main stream come from slopes grazed so destructively by herds of domestic cattle and sheep that they are cursed with gully and sheet erosion. The skin of the earth is washed into the Rio Grande and the river carries a silt load of fabulous tonnage —and fabulous lost wealth in displaced topsoil.

As early as 1600 Indians had constructed twenty-two irrigation ditches along this river, bringing vital water to 25,555 farmland acres. By 1800, there were seventy ditches watering 100,380 acres. Eighty years later, eighty-two ditches irrigated 124,800 acres. This was the peak in irrigation acreage in this middle section of the Rio Grande Valley.

As greater settlement progressed, the uplands were loaded, then overloaded with stock. While there always has been erosion on these slopes, the loss of range cover and retentive values through over-grazing produced extremely excessive erosion. Floods increased, because the rain and snow falling on denuded slopes were not held back to feed into tributaries in more moderate flow. Racing waters picked up the scoured surface soil, hurried it down from precipitous slopes and channels, and then when the river slowed the silt was deposited. It built up the river bed until the bottom of the Rio Grande at Albuquerque is four feet above the main street level of this city, and dikes have been installed to hold the river from spewing through the town.

With the river bed built up by that lost soil treasure from upper slopes, the water table rose on the rich alluvial lands of the river bottoms. Lands formerly productive became waterlogged by seepage. Irrigation ditches were clogged with silt. The productive irrigated acreage along this section of the river dropped from a peak of nearly 125,000 acres to an average of about 75,000.

Twenty years or more ago, a plan was launched to rehabilitate the irrigation facilities and the lost crop lands. The Middle Rio Grande Conservancy District was formed under a state law. Briefly, it was an engineering prescription for the trouble: dikes, levees, ditches, dredging. Bonds were issued to underwrite the construction and costs were assessed against properties expected to be benefited.

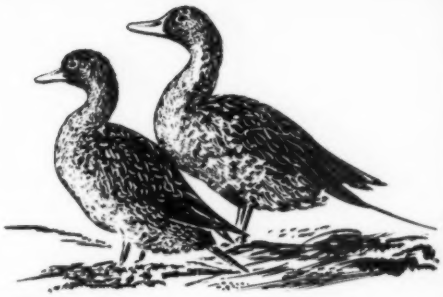
Concrete, steam-shovels and bulldozers weren't the right medicine. Rehabilitation of irrigated lands did not succeed as expected. The Conservancy District got into financial difficulties. Failure of the engineers' prescription to solve the maladies by construction of works down stream caused many acres of lands to be abandoned because of unpaid taxes and "assessments of benefits."

Now the Army Engineers and the Bureau of Reclamation have their prescription for curing the river's ills and making the lands healthy—the same medicine as before but in a mightily increased dosage. They propose taking over the works and woes of the Conservancy District and building more dams, dikes and drains, with federal funds refinancing and enlarging the project.

The main features of the scheme now proposed are the Chiflo Dam in the canyon the Rio Grande traverses just south of the Colorado line, a dam on the Chama River, a dam on the Jemez River, both tributaries out of basins where the erosion is most grievous, and nearly nineteen miles of dredging of the Rio Grande main channel just above Elephant Butte reservoir.

The Chiflo Dam would contribute to fishing resources, because it would serve as a settling basin for silt. Sixty-five miles below it the main river would be transformed into a good trout stream. The impounded water above it would form a lake which, in spite of fluctuating water levels, would have some value.

The other two dams would back up waters to destroy antelope, sage grouse, scaled quail and other wild-



life values, but because plans are so drawn that they would be drained completely each season, they would not have a pool of water remaining which might compensate for wildlife losses. If plans were changed so a pool would remain throughout the year, there could be some off-setting wildlife values resulting.

These two dams are "flood control" structures. The Chamita Dam is planned to have 180,000 acre feet of sediment impounded there so that earth-skin will not go into the Rio Grande. An acre foot is the equivalent of one foot in thickness and one acre in area. The Jemez Dam is designed to retain 90,000 acre feet of sediment storage. And there is provision for 30,000 acre feet of silt retention in the Chiflo reservoir.

The root of the trouble lies on the damaged watersheds above. These engineering plans set out to cure the malady by letting the waters continue to flood down with their loads of silt, and they are nothing but a poultice; no cure. The cure lies in rehabilitation of water retention values on the slopes above. When the areas above

Ponds like this in the Bosque del Apache Wildlife Refuge, with sandy soil bottom, will likely disappear when dredging of Rio Grande lowers water table

the dams are choked with mud, what then? More dams? Another hundred million dollars to again poultice the situation?

And what would a few million dollars applied to rehabilitation of watersheds do for the abused soil and range? There's where money might buy the cure. You can't rectify erosion and flood crests by throwing concrete or earth-filled dams across a stream far below the area of origin. You need flood and erosion *prevention* instead of control.

Incidentally, fifty-seven percent of the lands within the watershed of the Rio Grande are owned by the federal government. These are some of the public lands of the West over which a struggle has raged during the past few years, because a small group of stockmen have attempted to secure title to them or attain dominant control of their uses. One of the great protests of these stockmen has been that grazing of watersheds is economically impossible; it never could happen.

What has happened in the Rio Grande basin, on grazing lands, explodes the utter fallacy of such a claim.

The construction of such transitory controlling of floods and silt from skinned slopes as the engineers urge may be the one answer to the immediate situation, but it isn't the cure—ever. It's stop-gap action.

Now drop down the river to the famous Elephant Butte area. As the silt-filled Rio Grande reached the Elephant Butte lake inlet, it slowed. The sediment settled. Since the dam was built in 1916, a delta formed.

The river has backed up above the delta. Several lakes and marshes have formed; the principal lake is San Marcial—where the rare New Mexico ducks nest, where the egrets congregate in mating season.

Above that is the federal refuge, the Bosque del Apache, principally a waterfowl area. Water from ditches is spread between dikes to partially cover standing grains that have been sown there for waterfowl food. There are about 7,000 acres of such duckhaven here; an oasis in the midst of country that, for miles on either side, is bone dry much of the year.

What's proposed here? Dredges. Great dredges that will scoop out the channel of the Rio for nearly nineteen miles above the inlet to Elephant Butte. This will lower the river bed, built up by deposited silt, six or seven feet—lower the channel enough to drain surrounding areas.

San Marcial and the other three lakes will be gone. Sage and cactus will creep in on the dry land where once the rare ducks nested, the egrets mated, where game fish spawned and grew and fought to the delight of thousands of fishermen.

Optimists believe the important refuge area above San Marcial will not be affected materially. They believe the water brought in by ditches can be held back of dikes of the Bosque del Apache. But the soil is sandy. Scoop out the channel of the Rio Grande, lower the water table of this whole section of the valley, and there may not be enough water running through ditches to keep up the lush duck habitat between dikes where sportsmen's dollars and the water table made by the delta have created an ideal waterfowl production plant.

The flats of this section of the river above Elephant Butte are massively covered with brush; tamarix bushes, called salt cedar. The engineers have figured a tremendous amount of water is lost because this brush gives off moisture. They believe the lake surfaces evaporate other thousands of acre feet of water. So they are going

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Low water level in irrigation reservoir north of Albuquerque, New Mexico, reveals heavy silt deposits

Soil Conservation Service

John C. Gifford

Death claims eminent American forester—who a half century ago served as the first editor of *American Forests*

THE nation lost an eminent citizen and the world one of its most distinguished foresters in the death on June 25 of Dr. John C. Gifford. At the age of seventy-nine, this internationally known forester, scholar and scientist passed away at his Miami, Florida, home after an illness of several months.

Closely associated at the turn of the century with Dr. B. E. Fernow, Dr. J. T. Rothrock, Gifford Pinchot and other far-sighted men in pioneering the forest conservation movement in this country, Dr. Gifford has left a notable impression on its progress.

He was recognized as an outstanding American authority on tropical forestry—and since 1931 conducted a tropical forestry course at the University of Miami.

He was the first editor of AMERICAN FORESTS. When The American Forestry Association in 1898 purchased the *New Jersey Forester*, owned and published by Dr. Gifford, to adapt as its official organ, he was retained as editor. First issued as *The Forester*, the magazine became AMERICAN FORESTS in 1931.

A prolific writer, he was the author of numerous books. Perhaps the best known of these is *Living by the Land*, published in 1945, which portrays Dr. Gifford's rich philosophy of life that led him to settle on the edge of the tropics.

A native of New Jersey, though a resident of Florida since 1902, Dr. Gifford received his bachelor of science degree from Swarthmore College and went on for special work in botany at the University of Michigan and Johns Hopkins University. Later he studied forestry in Germany, receiving his doctor's degree in forestry at the University of Munich. He then joined Dr. Fernow on the faculty of the first professional forestry school in America at Cornell University.

In 1903, Dr. Gifford was sent to Puerto Rico by the federal government to prepare a report on the Luquillo Forest Reserve. This fired his interest in tropical forestry and sent him traveling widely throughout the West Indies, Central and South America and Mexico.

Dr. Gifford's work with tropical forests and fruits brought him worldwide recognition. But of even greater satisfaction to him, it resulted in closer educational and social association between the peoples of the American tropics.

Parachuting into treetops to fight forest fire is tough, exacting work — here's what it takes to make the first jump

The Making of a Smoke Jumper

Four of the U. S. Forest Service's contingent of 240 smoke jumpers were dramatically introduced to Washingtonians on June 28 when they parachuted into the city just south of the White House as a highlight of a program, televised in eastern states, saluting American business for its contribution to the national forest fire prevention campaign (see page 47). Chief function of these hardy airmen is to provide speed of attack in quelling fires in formerly inaccessible western forests.

For smoke jumpers Bill Hellman, Ed Eggon, Bill Dratz and Homer "Skip" Stratton, the jump onto the velvety green grass of Washington's Ellipse was a snap. Generally, they

(*Turn to page* 40)

1 Smoke jumpers have to be fit. Jumping off the high ramp toughens legs, teaches candidate how to roll

2 Overhead ladder is toughener for arms and grip. Men work from one end to other without touching ground

3 Practice jump off 30-foot platform. Rope attached to jumper's harness approximates jerk of opening chute

4 Hung up to dry? No, learning to thread a rope through harness in case they ever get snarled up in a tree

5 This is it—the first jump. Spotter in plane says when. Mask is to protect jumper's face from branches of trees

6 There he goes! Pull of the static line is being applied to chute cover. The one in front is a spare—just in case

Partnership in The Woods

By ARTHUR B. MEYER

Missouri has an attractive proposition, including lower taxes, for timberland owners who join with the state in working for better forest management

BOLLINGER County, Missouri, is on the eastern rim of the Ozark Plateau. Generations of landowners have devoted their efforts to the creation of more open pasture and more cultivated fields. Yet sixty-three percent of the land area of the country is still timberland.

It is not good timber. In general the area has been overcut and high-graded and burned to a sad state of depletion. It would be easy to give up on it, mark it off as too low on the economic scale to bother with. But some landowners still have faith in these cutovers—and so has the state of Missouri. As a result, a partnership has evolved that promises better days for Missouri's woodlands—and for the citizens who own and operate these woodlands.

A. E. James of Zalma, is typical of these forward-looking landowners. One-time county judge who now operates a general store in addition to his land properties, he began buying cutover woodland twenty years ago. And with the instinctive trust in the real value of land which is inherent in many men, he acquired over the years a total of 1500 acres of timberland.

Possessing no special knowledge of the business of growing trees, he simply could not accept the judgment of "worthless" commonly passed upon these forests. In time, of course, he set about learning how to bring his sick acres back to health.

"Not everybody agreed with me," says Mr. James in mild understatement. "I wasn't too sure myself, at first. But after a while people began to realize that I wasn't fooling—that I didn't want my woods burned for pasture, and that I didn't appreciate people helping themselves to ties or mine props off my land. As soon as my neighbors understood my wishes in the matter nobody set fire to my timberland. But it was a continuing problem to stop fires coming in from the outside. Often I didn't succeed. Timber trespass I handled fairly well, being able to watch my land. But all in all it was pretty slow going and a mighty lonesome undertaking for a long time. It's good to have some help now."

What kind of help? Mr. James now has a partner in his forest enterprise—the state of Missouri.

In 1946, about eight years after the first state forestry work was begun in the framework of a non-political Conservation Commission, the legislature passed a law known as the State Forestry Act, designed to bring about better management and protection of the privately-owned timberlands of the state, which still account for over nine-tenths of Missouri's fifteen million acres of forest.

"My land," Mr. James proudly tells you, "was the first property to be certified as forest crop land under the new state forestry law."

Forest crop land means land formally recognized by the owner and the state as being devoted exclusively to the growing of timber crops, although in some cases a limited amount of grazing is permissible on large tracts.

Before certification, a forester representing the Conservation Commission visited Mr. James and in his company inspected the land. Together they discussed the condition of the timber, the history of abuse and neglect which had so lowered the productivity of the land, the steps taken to improve the conditions, and the ways in which the state could assist the owner. They also went over the things which he would be required to do, or refrain from doing, as his share of the undertaking.

Soon thereafter the seventy-year-old James received an agreement of classification which contained provisions requiring him to make all reasonable effort to protect the lands from fire and to limit grazing to certain specified standards of maximum carrying capacity. Underlined were

Missouri foresters advised this landowner how he could pay for an improvement cutting in his woods by salvaging these mine props for a cash sale

Missouri Conservation Commission

A. E. James, forest landowner, discusses timberland management with state foresters who often drop into his general store at Zalma, Missouri. A native son and one-time county judge, he has 1500 acres of timberland

the basic precepts that would guide any cutting that he might make toward the maintenance of growing stock, the encouragement of reproduction and the protection of young timber.

Without attempting to write out specific minimum standards of management, the agreement required Mr. James to advise the state in writing thirty days in advance, giving the details of any plans for cutting so that assurance of compliance with sound forest practices could be made. Following any cutting, Mr. James agreed to submit a sworn statement of the quantity cut by species.

Upon the owner's acceptance of the stipulations of this agreement, the state forester issued a certificate classifying the land as forest crop land. This classification was to remain in effect for twenty-five years unless the owner voluntarily cancelled it, or unless the state, finding the owner not in compliance with the basic recommendations for forest management, ended the classification.

This certificate, recorded by the proper officials as a legal instrument, placed the land on the county tax records at an assessed valuation of $1 an acre. The average valuation at which the land had been carried before was $3.15 an acre. Mr. James continues to pay taxes on the land at the prevailing county rate but upon the automatic $1 valuation. This results in a sixty percent reduction of his annual taxes. In lieu of the loss in revenue, the state pays the county two cents an acre annually.

As Mr. James had been paying county taxes on this land for a period of about twelve years, it is obvious that he did not consider taxes as necessarily prohibitive to growing timber.

"It's quite a help, however," he says. "And I can see how in many cases, where timberland is even more seriously run down than mine, the annual tax burden might be the final discouragement—added to the many other things which a forest owner in the Ozarks must worry about."

The deferment of taxes may or may not be a major consideration to an individual owner, depending upon the circumstances involved. In either case, the intent of the law was to offer such assistance as a binding link, a cementing agent, between the owner and the state in a partnership undertaking—a tool to get sound forest management practices out into an owner's woods.

The first thing Mr. James did after classifying the land was to request the help of a technical forester in planning improvements for his woods.

A reconnaissance showed that in addition to protection, nature could be speeded along considerably in her process of rebuilding if a quantity of low-grade timber could be removed. An eighty-acre block of land was marked for stand improvement, selecting trees of poor species, poor health or condition and those crowding and holding back valuable young growth.

The forester produced no special

(*Turn to page* 46)

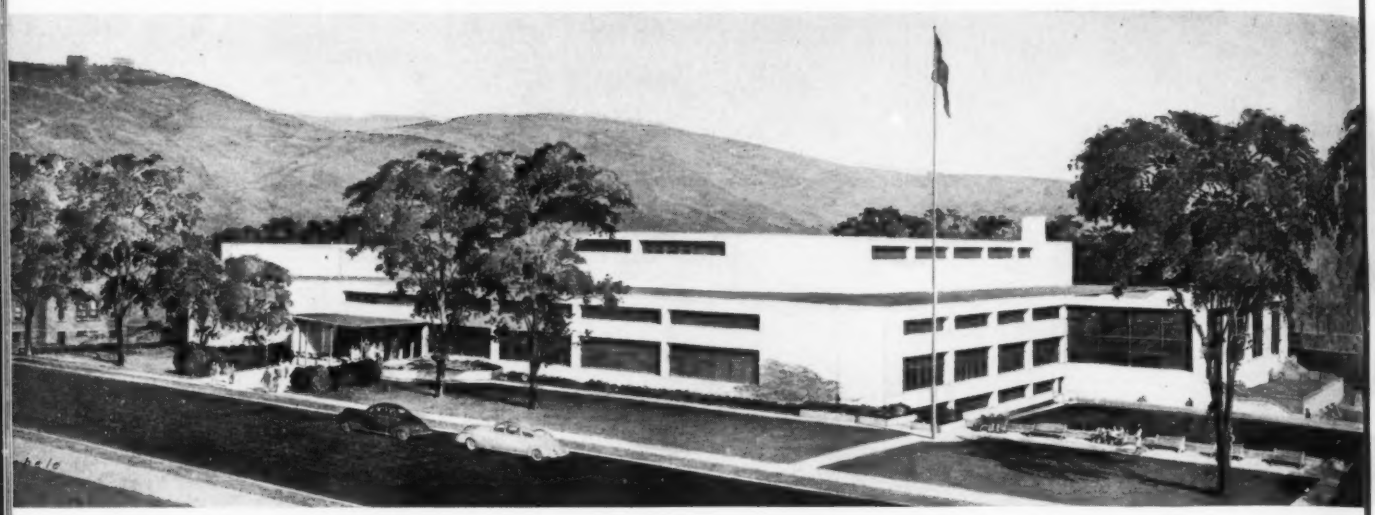
By John Kabel

TIMBERLINE IN ALASKA

Green walls of the forest arch downward to Prince William Sound from this timberline perch outside Cordova

Mountain Hemlock

Pattern for Human Conservation



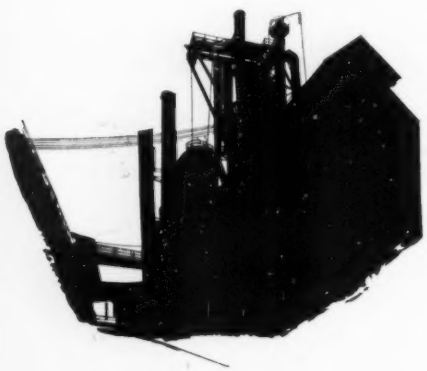
This million-dollar community house will soon be the hub of Weirton's elaborate recreation program

By JAMES B. CRAIG

THE industrial relations program of the Weirton Steel Company, on the Ohio River in West Virginia's panhandle, is a sound example of how conservation principles can be applied to contribute to the welfare and happiness of people.

Based on the conviction that American workers are our greatest resource, the crux of the Weirton philosophy is contained in the homely precept "treat people like people." The application of this rule to men and women who smashed one steel production record after another in World War II hinges partly on an attractive all-round recreation program.

This emphasis on healthy recreation has achieved some excellent results. The payoff in Weirton's case has been the good will of 12,000 employees and uninterrupted production for the last sixteen years. Both factors have contributed materially in making Weirton the largest independent producer of tinplate in the world. It has also made the community a better place in which to live.



Generally, in recent years, the term "industrial relations" has not had a happy connotation in the public mind. To many it has meant representatives of management and labor belaboring each other across a conference table with morose workers picketing just outside the plant gates. Too often these explosive conditions, aggravated by the machinations of troublemakers striving to drive a wedge into the heart of the greatest production team in the world, result in an appalling waste of time and resources.

But not at Weirton. When Industrial Relations Manager Ray Corll gets together with Weirton workers at a table he prefers to be there for the same reason they are. Generally he is. The Weirton family is a miniature "one world" colored by the customs of thirty-six nationalities. One of the happier customs is that of giving epic "feasts" to celebrate various and sundry historical events. With thirty-six nationalities on the job, feasts are a common occurrence in Weirton, and Corll is in demand at all of them. In other words, it's a family affair.

And the fact that Weirton workers like their boss, President Thomas E. Millsop, was clearly demonstrated in 1947 when they nominated him to be the first mayor of their newly-incorporated city and elected him by a vote of five to one.

How has Weirton Steel fashioned this hard-hitting production team? One answer is the highest basic minimum pay for employees in the industry—$1.26½ an hour. Another, and even more important, is the attitude that has evolved in the minds of Weirton workers over the years, through good times and bad, that the company is the best friend they've got.

There are plenty of reasons why Weirton workers feel this way about their company.

There's the lodge operated by the Weirton Industrial Police Association, for example. Ten minutes from the plant, it's a sylvan retreat featur-

The realistic recreation program evolved by the Weirton Steel Company shows that the application of conservation principles to workers can be one of the soundest investments in industry

ing a meandering brook and a wealth of shady hardwoods where steelworkers relax after a hard week. The park is booked solid all summer. Picnic lunches are on a prodigious order (the Serbs roasted ten pigs early this summer) and beer flows freely with the official drinking mug being well-scrubbed tin cans made of Weirton tinplate.

A quonset hut equipped with refrigeration units, hot ovens, a recreation room and one of the biggest fireplaces in West Virginia is the center of park activity. Softball diamonds and a shooting range are laid out nearby.

It's a place workers go to have a rollicking good time—and they do. The park is an excellent place to relax, to eat, play and sing.

At one time a bear was a stellar attraction at the park, but bad fish put an end to what must have been an otherwise happy career. While it had a pen, generally the animal ran loose mingling freely with the picnickers. Steelworkers say lodge initiations aren't the same in Weirton since the bear died.

It would be difficult to name any community project undertaken in recent years that hasn't received substantial support from the steel company. Many of the town's recreation centers were given to them outright. For example, there's the Margaret Manson Weir Memorial Park with its swimming pool, lighted tennis courts, two basketball courts and a shelter house for the teen-age set; the Pleasant Valley and Williams country clubs; the high school stadium; the fire department; and an eight-pylon lighting system for night softball games.

A few years ago, Ernest T. Weir, chairman of the board of the National Steel Corporation of which Weirton is an affiliate, decided that the community needed a new community center.

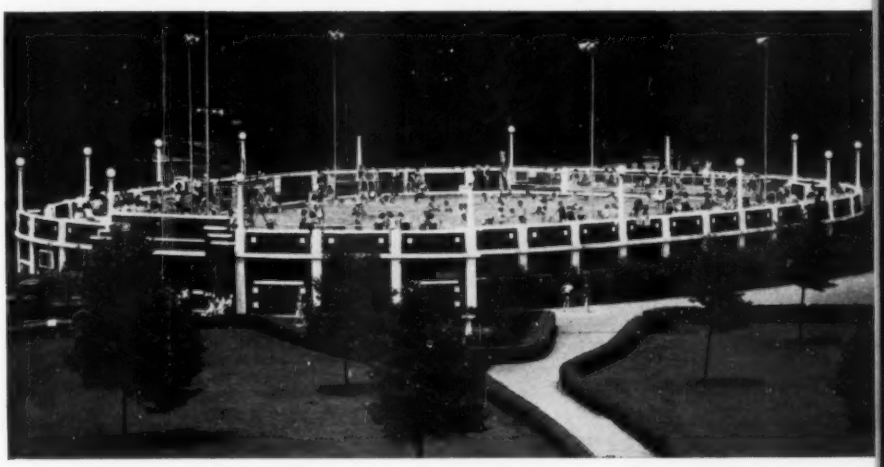
"Let's build the best community center in the United States," Weir said and started the ball rolling with a company contribution of a quarter million dollars with the understanding that the community raise a like amount.

Accordingly, Corll was dispatched on a community center study trip and after visiting centers at Hershey, Pennsylvania, Detroit, Michigan, and Cincinnati and Dayton, Ohio, returned home to report that community houses came high. It would take at least a million dollars to build a good one, he said.

"All right," Weirton officials said,

(*Turn to page* 44)

Ten minutes from the plant, the Police Lodge is a sylvan retreat where Weirton workers relax after a hard week. It's booked solid in summer



Over 32,000 bathers flocked to the swimming pool in Margaret Manson Weir Park last year. The pool and adjacent park is operated by Weirton Steel

A $15,000 dream came true when the company provided this eight-pylon lighting system for night softball. Weirton fields some classy teams

The Key that is made of wood

By JOHN F. PRESTON

It's time for America to change its agricultural philosophy and recognize wood as a farm crop. Farmers can't afford to continue ignoring a potential yearly income of $750,000,000

FOREST trees, our greatest single conservation crop, are still unrecognized, unappreciated, and unused on the American farm. This is one reason our land is not yet producing up to its capacity, why our total farm income is less than it should be. And it explains in some measure why our soils are washing away so rapidly.

Wood grown, managed and marketed by farmers would keep in production many acres otherwise doomed to failure through futile efforts to convert them to uses for which they are inherently unsuited. That this isn't being done on a large scale today is due mainly to American agricultural philosophy which has never recognized wood as a farm crop.

East of the Mississippi River about twenty-five percent of farms are in woods. In all states 140 million acres of woods, or forty percent of all privately-owned commercial forest land, are farm woodlands. Because they are neglecting this resource, farmers are losing a potential yearly income of $750,000,000. An enduring agriculture cannot be built on a basis of using only part of the plant. A manufacturer who utilized only seventy-five percent of his plant's producing capacity could not long stay in business.

And the cold fact is that despite its record of large production, our farming industry is having a hard time staying in business. Most of the production comes from large and medium-sized farms. About sixty percent of the farm population live on these farms. Thus the farm problem, from the standpoint of production and standard of living, is with the lower forty percent of farms and farm people. "The toughest problem," says the Department of Agriculture, "is offered by about a million small-scale farms with an annual value of products from $500 to $1200."

The aid that forestry can bring to farmers is twofold. First, as noted, it can increase farm income as much as $750,000,000 a year. Then its adoption as a regular and recognized farm activity on wooded acres gives new impetus to conservation farming. Forestry *is* conservation. It can be nothing less. It conserves present resources in order to build a better basis for future income. In doing that, current income gradually increases. The permanence of the income-producing capacity of the land for future generations is assured. That is the essence of conservation. That is what we are trying to do in soil conservation. A farmer cannot be a conservationist in his woods and a destroyer on the rest of his farm.

The American people were made conscious of the need for conservation of natural resources forty years ago by Theodore Roosevelt and Gifford Pinchot. Another conservation team, Franklin D. Roosevelt and Hugh H. Bennett tackled the problem of soil erosion. The latter put life and reality and substance into soil conservation. He built on the foundation laid by Pinchot and the first Roosevelt. The people already knew what the word "conservation" meant and were quick to realize its nation-wide application to the soil. They could see the gullies in the fields, the thick mud in the streams, the dust in the air. These things took on new and ominous meaning. The people and the Congress were willing to back the farmers in efforts to save the soil.

Our record of accomplishment in soil conservation, while encouraging, is not yet convincing. Millions of acres of land now in farms, cleared of the original forest and cultivated, never produced enough wealth to pay the cost of removing the timber. Some thirty million acres on farms, once cultivated, are now classed as wasteland. Other millions have been reclaimed by the forest or planted to forest trees and do not now appear in our agricultural statistics. Most of this land destruction occurred before the advent of high-powered machinery. Today, in spite of efforts of conservation agencies, our soil is going downstream or being blown by the wind at an alarming rate.

Conservation farming means the use of every acre of land "in accordance with its needs and adaptability," to quote Dr. Bennett. Not only the cultivated fields and pastures but the farm areas in woods require the at-

(*Turn to page* 41)

Secretary of Defense Louis A. Johnson and Senator Robert A. Taft head list of notables to address national conference in October. Oglebay Park at Wheeling and Ohio's famed Muskingum Watershed Conservancy District to be visited

The 68th Annual Meeting

of The American Forestry Association, with The Ohio Forestry Association and The West Virginia Forest Council cooperating, October 10 to 13

PROGRAM

Monday, October 10, at Wheeling, West Virginia—Governor Okey L. Patterson will welcome the conference at a special luncheon, with opening addresses by A. C. Spurr, president of The American Forestry Association, and former Governor Leslie A. Miller of Wyoming, who served with the Hoover Commission as chairman of the Natural Resources Committee. Governor Miller's subject will be "Conservation of our Natural Resources—Asset or Liability?" In the afternoon, the conference will visit Oglebay Park—with evening program by Oglebay Institute.

Tuesday, October 11, at Oglebay Park—With Dean Samuel T. Dana of the School of Forestry and Conservation, University of Michigan, serving as chairman, the morning session will be devoted to the subject "Water is Life." Speakers will be former Governor Ralph Carr of Colorado, George Phillips, assistant to the Secretary of Agriculture; L. A. Danse, chairman of General Motors Industrial Waste Committee; and E. N. Munns, United States Forest Service.

A luncheon panel on "What Are We Seeking in Conservation?" will bring together Edward A. Wayné, vice-president of the Federal Reserve Bank of Richmond, Virginia, as discussion leader; Kent Leavitt, president of the National Association of Soil Conservation Districts; Walter D. Fuller, president of the Curtis Publishing Company; Congressman Robert T. Secrest of Ohio; Governor James H. Duff of Pennsylvania; and William Vogt, author of *Road to Survival*, and chief of the Conservation Section, Pan American Union.

In the evening the conference will hear Tom Gill, secretary of the Charles Lathrop Pack Foundation, on the subject of "World Forestry"—and Bryce C. Browning will review the work of Muskingum Watershed Conservancy District in Ohio. Mr. Browning is secretary-treasurer of the District.

Wednesday, October 12—Field trip through the Muskingum District, with Mr. Browning as leader. Senator Robert A. Taft, of Ohio, will address the conference during luncheon at Leesville Lake.

In the evening, members will gather at the Mayflower Hotel at Akron, Ohio, for the American Forest Banquet and an address by Secretary of Defense Louis A. Johnson on "Natural Resources in National Defense."

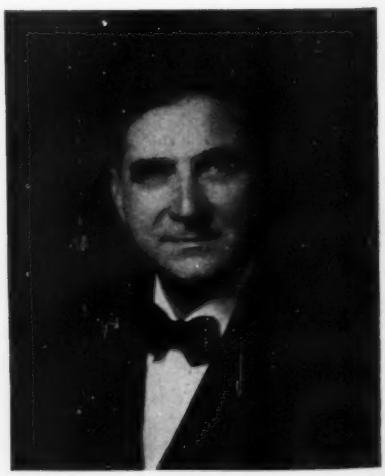
Thursday, October 13, at Akron, Ohio—Members of the conference will move on to Malabar Farm and a noon barbecue as the guests of Louis Bromfield, famous author and conservationist, and an address by Governor Frank J. Lausche of Ohio. Return to Akron in afternoon.

Harris & Ewing

West Virginia's Gov. Okey T. Patterson will open conference at Wheeling

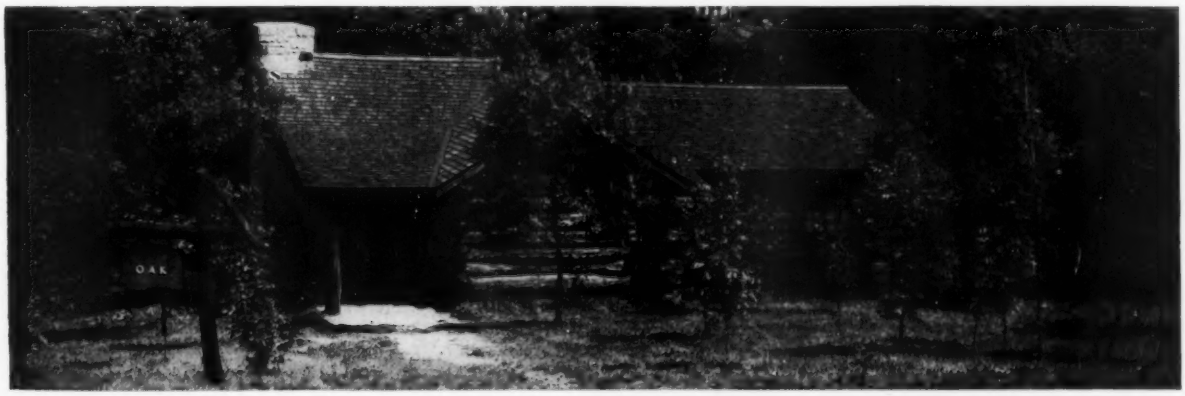
U. S. Army Photo

Secretary of Defense Louis A. Johnson will discuss resources and defense



Ohio's Governor Frank J. Lausche will talk about plans for water control

A highlight of the 68th annual conference will be trip to Louis Bromfield's Malabar Farm near Lucas, Ohio. Members will be guests of the famous author and conservationist



Picturesque cabins such as this will be available at Oglebay Park in Wheeling for those attending opening sessions. Park with its arboretum is one of the show places in East

Beautiful Piedmont Lake, one of man-made lakes in the Muskingum Watershed Conservancy District of Ohio. Senator Robert A. Taft will address the conference in such a setting

Ohio Development and Publicity Commission

Photo by Soil Conservation Service

Highways protected by strategic shelterbelts and shrub rows such as this one near O'Neill, Nebraska, were easily kept open during the worst of last winter's blizzards. Without this protection drifts were often eight feet deep

Trees that Beat the Blizzard

By ROSS WILLIAMS

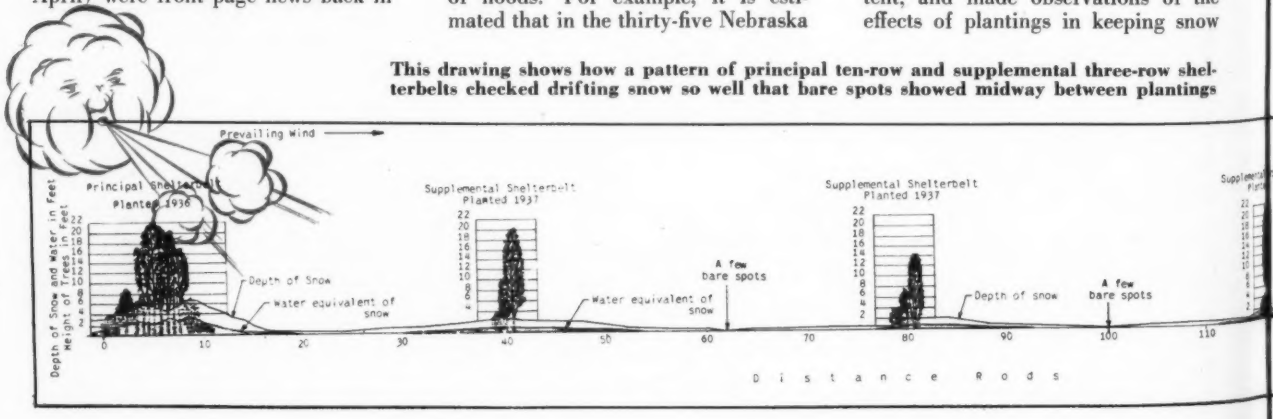
Planted rows of shelterbelt trees were subjected to their most severe test last winter when record snowstorms swept the Great Plains states. Here is how they met the challenge

THE role of field shelterbelts and farmstead windbreaks in softening the blow of last winter's record blizzard throughout the Great Plains country can now be told. The havoc wrought by the series of snowstorms and the drama of rescue operations (see "Operation Snowbound" in AMERICAN FORESTS for April) were front page news back in January, but up until now little has been written about the part played by strategically planted rows of trees in keeping farmyards, feedlots and routes of supply open.

Or how later, when the snow began to melt, those same planted trees held back almost inconceivable amounts of moisture and helped ease the threat of floods. For example, it is estimated that in the thirty-five Nebraska counties within the disaster area, tree plantings of five or more years' growth held snow that contained over 440,000 acre-feet of water, most of which lay on unfrozen ground.

Beginning in January, shortly after the heaviest storm, U. S. Soil Conservation Service personnel took pictures and snow-depth measurements of representative plantings in the territory around O'Neill, Nebraska. Then, in the first week of March, they surveyed the cross-sections of the drifts, computed the moisture content, and made observations of the effects of plantings in keeping snow

This drawing shows how a pattern of principal ten-row and supplemental three-row shelterbelts checked drifting snow so well that bare spots showed midway between plantings



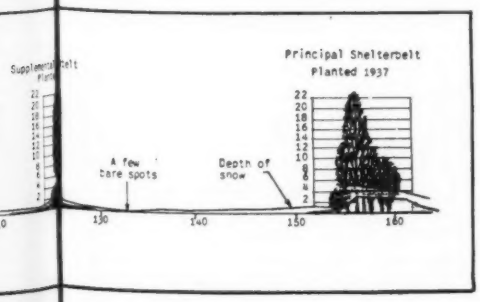
from drifting on highways and in farmsteads. Moisture content of the snow was high—only two and three-tenths inches of snow to equal one inch of water.

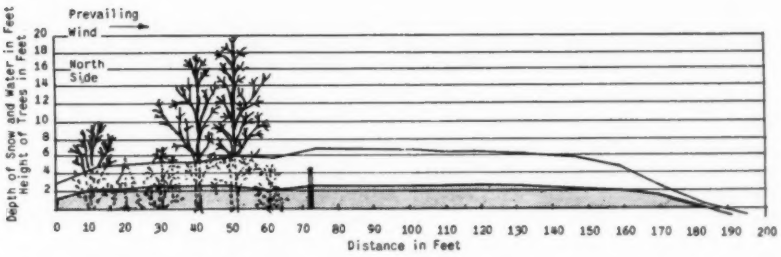
In general, it may be said that well-developed shelterbelts and windbreaks at least seven rows wide and with a good shrub or conifer row on the windward side, trapped all the drifting snow in or close to the plantings. Effectiveness of other plantings varied as they deviated from this minimum standard.

One of the farms under observation was the E. A. Edmisten place near Page. This square mile is protected on the north and west by ten-row shelterbelts, with good conifer rows on the windward side. Narrower secondary plantings cross the farm in both directions along the quarter-section lines. The northern half is further protected by four three-row supplemental shelterbelts spaced at forty-rod intervals. These plantings were made in 1936 and 1937 by the Prairie States Forestry Project.

The principal or ten-row shelterbelts caught and held, mostly within them, the drifting snow from neighboring land. But on the Edmisten farm itself, snow movement was slight. There were a few bare spots about midway between the shelterbelts, but otherwise the snow was kept rather evenly distributed over the land. Moisture in the snow held on this farm amounted to 353 acre-feet.

Another excellent ten-row shelterbelt was studied on the John Dick farm near O'Neill. A mile long, and exceptionally well cared for, it parallels U. S. Highway 20 for a distance before swinging around the farmstead to protect the farmyard, buildings and feedlots. It was planted in 1939 and, like the Edmisten shelterbelts, the tallest growing trees had reached heights of more than twenty feet. The conifers — ponderosa pine — were about fourteen feet tall, but were on the lee side. Because of this, the deepest part of the drift was in back of the belt and extended for about fifty





The six-year-old shelterbelt in the background kept a path open for Clarence Ernst to haul hay to his stock. Drawing (above) shows length, depth of drift

Photo by Soil Conservation Service

feet beyond the trees. Nevertheless, the trees did their job.

"Our farm became a community headquarters during the winter because the farmyard was relatively free from snow," Mr. Dick said. "Neighbors left their cars here and made their way home by horseback or otherwise."

Another neighbor, he said, got his cattle over to the Dick farmyard so that a transport truck could take them to market. The main highway was open. Very little snow reached the highway where the shelterbelt paralleled it.

Snow in the shelterbelt was nearly twelve feet deep when it was measured in January. By March 3, when moisture measurements were made, the snow had settled until it was slightly under ten feet. Water content of the snow in this mile-long shelterbelt amounted to 76.8 acre-feet.

Although his half-mile-long shelterbelt is only six years old and six rows wide, it still enabled Clarence Ernst,

(*Turn to page* 42)

Bad Medicine for the Rio

(*From page* 12)

to skin off the brush from 10,500 acres as well as destroy the lakes and lower the water table. This brushland now has cover for a lot of upland game—deer, quail and other species.

In addition, the plan calls for holding Elephant Butte lake at a lower level than has been maintained. The lake would be reduced by 3,500 *surface* acres. That cuts the area of the lake by one fifth. Furthermore, the shrinking of the lake by this much surface area would take place around the edges—spawning grounds for bass, crappies, blue-gills and other fishes, and the best established fishing areas. Just what massed damage this might do to a famous fishing water has not been estimated.

All this dredging just above Elephant Butte is justified, in the engineering mind, by a necessity—the fact that New Mexico and Colorado, some years ago, entered a compact with Texas to deliver down stream a specified number of acre feet of water each year, when, as and if called for. There also is a treaty with Mexico to make similar specified delivery of water. The argument is, that by dredging and draining, the obliteration of four lakes and all that will be lost with it, more water can be available to meet these obligations entered into by the states.

Of the estimated cost of the whole project, the item called "channel rectification" (dredging) is set on the basis of 1947 costs, at $9,100,000. Furthermore, the *annual* cost of *continuing* to dredge out that lost topsoil that comes from abused slopes above, an estimated thirty-nine million tons each year, is set at $420,000—even with the expensive dams installed as silt-catchers and flood-holders above.

And here are some other estimates: the total allocation to wildlife resources in the whole project totals $36,000—out of nearly $100,000,000. The estimated *annual* allocation to wildlife is $400.

It may be imperative that the states deliver the water down basin as provided in the treaty and compact—obligations signed, sealed and delivered undoubtedly without any consideration of an immense wildlife value that would be affected.

The rehabilitation of the 23,000 acres of farm land, it is believed, this $100,000,000 expenditure, with following annual expenditures of around $500,000 to maintain the engineer's poulticing, may be the only answer to the problem. The menace of floods shooting down from skinned slopes higher up may be met now only by damming, diking and dredging.

"Reclamation" and "flood control" are sacred cows. Anyone questioning their complete beneficence is a renegade. The magicians of engineering are accepted as the prophets supreme who can juggle a river basin in one hand while tossing Old Dame Nature around in the other, and be expected to finish their act in "a triumph over nature."

Of course, there's a sour note in the picture. For decades they've been applying the poultice to the situation on the Rio Grande. But Old Lady Nature continues to progressively penalize mere man for the misuse of rangelands above. And now men are going to show her again—with the same bag of tricks.

There hardly seems need for pointing up the highlights of this brief sketch of what's proposed for the Middle Rio Grande Valley project. The dams, dredging and dikes are proposed because of excessive erosion on high watersheds far above these poulticing measures. The locale of the cure is on those ravished slopes, and only a fraction of the cost of all the structural measures could go far toward solving the basic problem—healthy watersheds.

The measures for which the public money would be expended may add the 23,000 rehabilitated acres to production for the time being—but the life of the project is estimated at from fifty to seventy-five years. What then? More dams?

Highly important from the sportsmen's viewpoint is the destruction of priceless wildlife habitat and production facilities.

Every time man in his mightiness tampers with fundamentals of nature's world, the wildlife resources are involved. What is projected on the Rio Grande is a tiny fragment of the whole program of such tampering. But add all fragments together, and you get something stupendous.

If we are to prevent a gigantic loss in wildlife values as multiple billions are spent in damming, dredging, ditching and diking, the full force of the voice of twenty-five million sportsmen and other conservationists must lift solidly, and demand that these values be not wantonly demolished as the hundreds of reclamation and flood control projects now proposed are carried out.

You may not be directly interested in the egrets and ducks on Lake Marcial, or what may happen if the water table is lowered in our Bosque del Apache refuge. But if you'll recognize this as a case history, an example of what can happen, and is all set to happen in literally hundreds of spots over the nation, you may become aroused and concerned. I am.

MY FAVORITE TREE

Bill Mauldin

Famous War Cartoonist

My favorite tree is the palo verde, because I have a sentimental attachment to it dating back to when I was a kid living in the heart of Arizona. These trees were too small to be much good for climbing, of course, and their foliage was too sparse to make much shade.

But, by heck, they were trees!

I admire their guts because they live where they do—and in their surroundings they manage to look more impressive than the most dignified California redwood.

Saturday Knights

Every Saturday since 1904, members of this small but unique Colorado club have hiked into the woods for an evening of fellowship around a campfire

By ROBERT M. ORMES

SHORTLY after lunch next Saturday, eight or ten of the male inhabitants of Colorado Springs, Colorado, will climb into automobiles and drive out somewhere a little past the city limits. When they have parked, they will swing off for a vigorous walk over the nearby ridges and game trails of the Pike National Forest, and then settle themselves to enjoy the evening before a campfire. Around dusk there will be a leisurely meal, each man pouring coffee out of the big pot that simmers at one end of the fire, and each man raking out a few coals to cook his steak. After dinner they will lean back and discuss the ways of the world for two or three hours before it is time to pull out their flashlights and head back toward the cars.

To the outsider this may sound like a bleak pattern for pleasure. There are neither guns, dogs, horses, nor skis, and only rarely and incidentally a fly rod. But the group which follows it seems satisfied. Except for a handful of scattered Saturdays they have given it continuous year-round use ever since the day in 1904 when somebody said, "Why not make it permanent?"

The originators of this idea did not trouble themselves with organization. They drew up no constitution, wrote no by-laws, and chose no president, secretary, or treasurer. If they have an officer it is the man who is custodian of the club's sole property—a coffee pot plus a small fund to keep it supplied. He also does the telephoning necessary for car pool arrangements. For the first quarter century it ambled along peacefully without even a name. It has one now only because a local reporter wanted something to call it for a piece in the paper.

Its only formal activity is the election of members. The group is kept around a dozen. This means that there are not too many along on any one trip to sit comfortably around a single fire and keep the conversation general instead of divided.

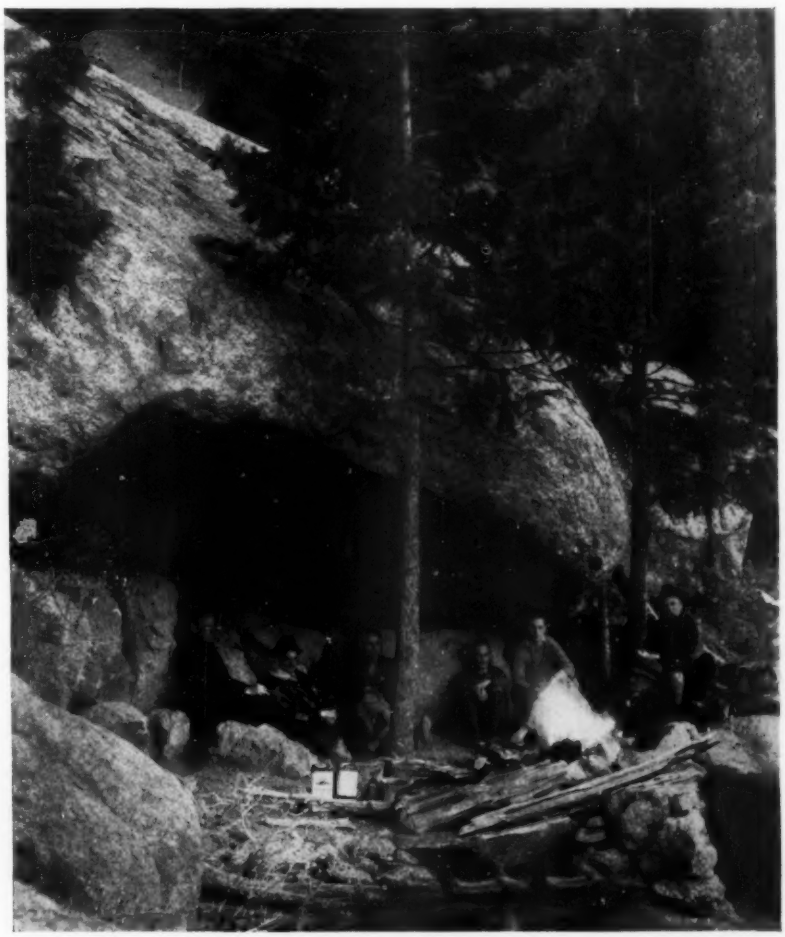
The club has tried to be inclusive rather than exclusive in its membership choices. Though the number has to be small, the social, religious and political backgrounds of the individuals have wide variety. Every difference, while it may seem to introduce a jarring of personalities, turns out in the long run to be a source of both stimulation and humor.

There are about fifteen regularly used campsites. These places are only half an hour's walk from where the cars are parked, but the routes out to them have enough uphill work and distance to put a keen edge on the appetite. Several are good enough shelters for a stormy winter night.

The likeliest place is a natural hollow—a cave at the base of a cliff or the depression under a big boulder. When a potential camp is found, the floor is leveled off and built into an apron in front. At the back an arc of seats is set up where it will face the fire, which is built out on the apron. The seats are low and slightly back-tilted. They are usually made with a pair of flat rocks.

The first man into camp usually starts a fire so there will be ample coals for cooking. He uses a backlog —often a piece of charred wood left from last time—and builds against it a small wood fire, using scrub oak or aspen, either of which makes first

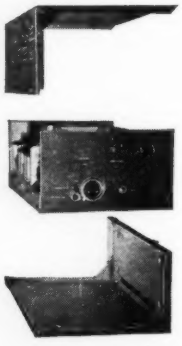
(*Turn to page* 46)



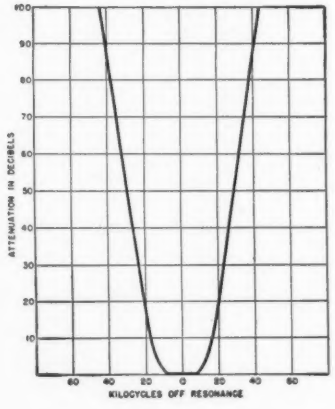
This natural hollow at the base of a big boulder makes a cozy campsite

NEW HIGHER POWER

The new RCA FLEETFONE is a mobile communication equipment designed to meet the special requirements of the 30-50 mc band. The FLEETFONE provides not only for the longer distances common on 30-50 mc and the higher power usually required, but also introduces a new high degree of compactness and installation convenience.



New "Sandwich" assembly



"CANYON-CURVE" SELECTIVITY

Compact "Sandwich" Construction. Within this ultra-compact housing is contained the complete transmitter, receiver, and power supply. The single-package "Sandwich" construction takes the difficulty out of installation. Simply bolt the base to the desired surface in the desired position. Insert the chassis. Fasten the cover. Connect the cables. It's as simple as that.

Mounting Versatility. The FLEETFONE is designed for mounting in practically any location or position. It may be mounted on its bottom, side, or attached to a vertical surface. This is especially important to operators of large fleets of vehicles of various types. The FLEETFONE is just as much at home in an automobile, a light pick-up, or a ten-ton trailer-truck.

30 or 60 Watts Output. In order to meet the coverage requirements of your particular area, the FLEETFONE gives you a choice of either 30 or 60 watts of transmitter output. In both cases, it's the same size, single-package unit.

6- or 12-Volt Operation. The 6-volt FLEETFONE is standard equipment for general, mobile application. In addition, many mobile vehicles, such as trucks, fire engines, etc. use a 12-volt battery. In these vehicles the 12-volt FLEETFONE (30 watts) eliminates the need for power-wasting, voltage dropping resistors, or the necessity to impose too heavy a drain on half of the battery.

Extra Features. "Canyon-Curve" Selectivity protects you against interference from stations on neighboring channels. The exclusive "Transducer Modulator Control" maintains a constant modulation level whether you whisper or shout into the microphone. High receiver sensitivity assures reliable reception at extreme distances and in the roughest terrain.

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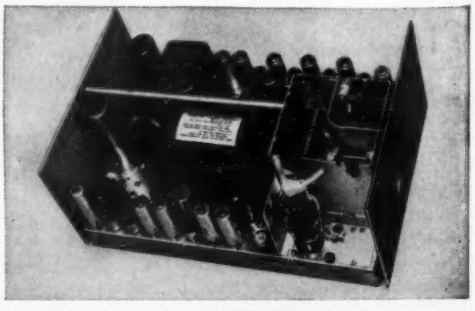


Inside view of the 30-watt FLEETFONE showing transmitter portion (foreground) dynamotor and receiver (background).

KNOWING YOUR TREES

ROYAL PAULOWNIA

Paulownia tomentosa, (Thunberg) Steudel

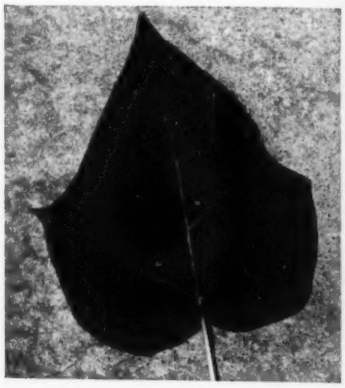
By WARREN D. BRUSH

THE royal paulownia presents a strikingly handsome appearance in the spring with its large pyramidal clusters of violet-colored flowers which fill the air for a considerable distance with their fragrant perfume. Its broad, long- stalked leaves give the tree some resemblance to catalpa. Introduced into this country from China and Japan, it has escaped from cultivation and occurs chiefly from southern New York and New Jersey southward to Florida and Texas, and occasionally in other localities where the winters are not too severe. It prefers deep, rich, moist soil and is most often seen in waste places in towns and villages.

Royal Paulownia is a low, widespreading tree with a usual height of 30 to 60 feet. Its trunk is short, thick

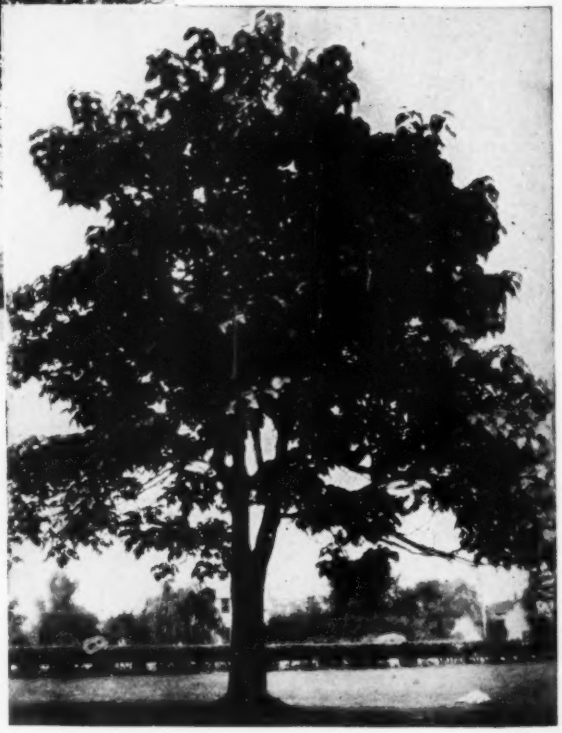
A low, widespreading tree with a usual height of 30 to 60 feet, it has a short, thick, trunk, generally from one to two feet in diameter, usually divided within a few feet from the ground into a few large, stout, spreading branches. In open situations they form a wide and often flat-topped open head, but when crowded by other trees the crown is usually rounded and more compact. A maximum height of 60 to 70 feet and a diameter of two to three feet is sometimes attained. The young twigs are covered with soft brown hairs. Later they become smooth and dark brown with large, nearly orbicular, elevated leaf-scars and prominent lenticels. The semi-circular, compressed, light brown leaf buds are about one-eighth of an inch long, and the much larger velvety flower buds, formed the previous season, are somewhat egg-shaped and measure about half an inch in length.

The broadly egg-shaped, short-pointed, oppositely arranged leaves are from five to fifteen inches long (even longer on vigorous shoots), and from four to eight inches wide. They are heart-shaped at the base and are attached to the twig by a petiole which is round in cross-section and from three to eight inches long. At maturity they are thick, dark green above and paler beneath. The margin of the leaf is smooth but some leaves may have a single short-pointed lobe on each side. Both surfaces of



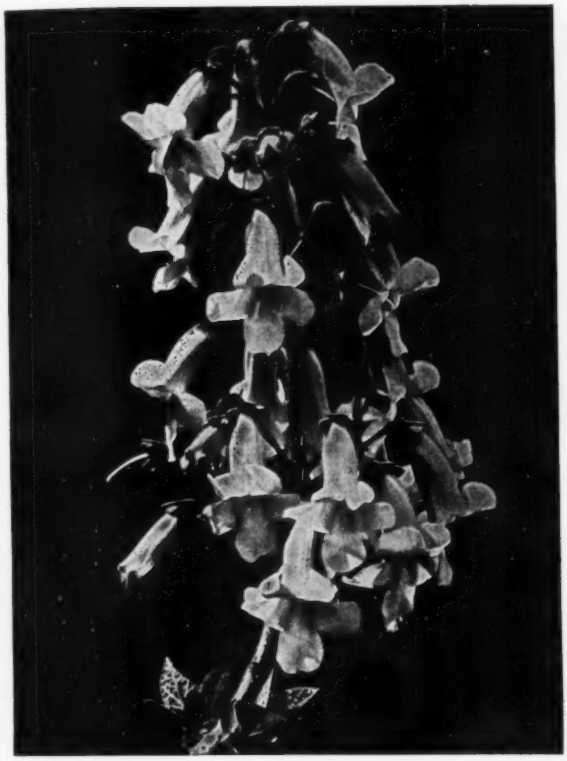
Fred Shulley

Some of the thick broad leaves have a single short-pointed lobe on each side



F. W. Besley

Preferring deep, rich, moist soil, Paulownia is most often seen in waste places in towns and villages

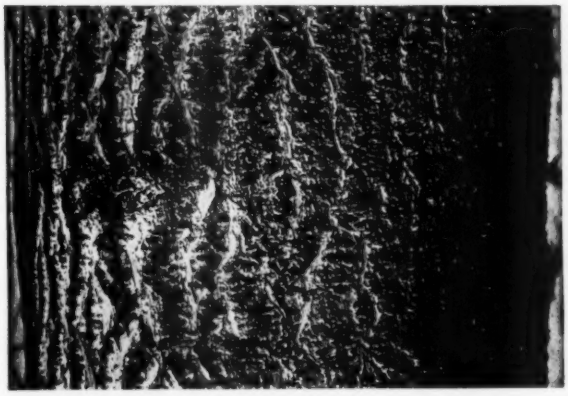


Devereux Butcher

The showy flowers, about two inches long, and borne on thick, densely hairy stalks, appear in dense clusters

J. Horace McFarland Co.

The olive-brown or bronze two-celled fruit capsules, one to two inches long, are sharply pointed



On mature trees, the bark is thick, dark grayish brown, and mottled with shallow grayish white fissures

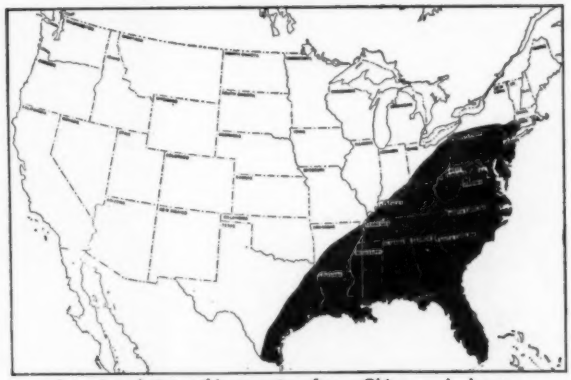
the leaf are finely hairy, but the upper becomes nearly smooth with age.

The showy flowers, about two inches long, are borne on thick, densely hairy stalks. They appear before or with the leaves in dense, erect clusters from eight to twelve inches long. The fruit is a large, leathery, olive-brown or bronze, abruptly pointed, two-celled capsule, one to two inches long and three-fourths to one inch thick, shallowly and longitudinally grooved on either side. At maturity the capsule splits open lengthwise, releasing the numerous small membranous-winged seeds. The open capsules remain on the branches throughout the winter.

On the trunks of mature trees the bark is rather thick, dark grayish brown, and mottled with a shallow, grayish-white network of fissures. The soft, light wood is easily worked, yielding a satiny surface. The heartwood is purplish brown and the thin sapwood yellowish white. It is highly valued in oriental countries.

The genus *Paulownia* is named in honor of a Russian princess, Anna Paulowna, daughter of the Czar Paul I. *Tomentosa* refers to the hairy or tomentose leaves. The name "princess tree" is also applied to this species.

The royal paulownia is commonly grown in the United States as an ornamental but is not ordinarily grown north of the latitude of New York City because the flower buds are usually killed during the winter. It is often grown as an ornamental foliage plant farther north, however, by cutting it back to the ground at the end of the growing season. When this is done, a single shoot will sometimes grow to a height of 10 to 12 feet during the summer, producing enormous leaves.



Introduced into this country from China and Japan, Paulownia does best where the winters are not too severe

NEWS IN REVIEW

Forest fires in this country dropped thirteen percent in 1948, the U. S. Forest Service has announced following a survey based on reports from all state and federal agencies participating in the protection of forest land. Number of fires reported was 174,189, as compared with 200,799 in 1947. There was an even greater reduction in acreage burned, 16,556,780 acres, or twenty-nine percent less than that of 1947, when 23,225,932 acres burned.

Approximately 100,000,000 acres of forest land are still without organized fire protection. Fourteen percent of the unprotected acreage was burned in 1948, as compared with .41 percent of the total area under state and federal protection. Out of the countrywide total of 14,282,963 unprotected acres burned, 13,080,705 were in the eleven southern states south of Virginia.

California's fish and wildlife resources received a financial shot in the arm at a recent meeting of the State Wildlife Conservation Board as members authorized expenditures of $4,470,000 for conservation projects. This is the largest amount ever appropriated for fish and game restoration by any state.

The board earmarked $2,380,000 of its three-year capitalization of $9,000,000 derived from the state's pari-mutuel horse racing receipts, for the acquisition and development of waterfowl management areas. These areas will provide public shooting grounds and waterfowl feeding areas to alleviate damage to agricultural crops. An appropriation of $1,364,000 was made for construction and maintenance of fish hatcheries, and $700,000 for development of fish ladders and screens, game farms and for quail projects and other similar work.

Reappointment of Dechard A. Hulcy, of Dallas, Texas, as chairman of the Natural Resources Committee, Chamber of Commerce of the United States, for the year 1949-1950, has been announced. Mr. Hulcy is president of the Lone Star Gas Company. W. S. Rosecrans of California, former president of The American Forestry Association, and Louis Bromfield of Ohio, and Frederick P. Champ of Utah, former AFA directors, will serve on the thirty-eight-man board.

The committee is responsible for effectuating the national chamber's policy declarations with reference to natural resources. Major interests to be considered, it was announced, include regional authorities and public power policy, reorganization of federal natural resources agencies under the Hoover Commission proposals, and proposals for federal regulation of forestry practices.

The 15th North American Wildlife Conference, to be held in San Francisco March 6, 7 and 8, will be built around the general theme "Are We Wrong About Conservation?" according to the Wildlife Management Institute.

The President on June 15 signed a proclamation changing the name of the Columbia National Forest in the state of Washington, to the Gifford Pinchot National Forest in honor of the first chief of the U. S. Forest Service who died October 4, 1946. This forest was established in Mr. Pinchot's early days and with his help. Including about 1,263,000 acres, it covers both sides of the Cascade Range from the divide between the Nisqually and Cowlitz rivers and the foothills of Mt. Rainier south to the Columbia River gorge. Formal dedication of the forest as a memorial to Mr. Pinchot will be held early in October.

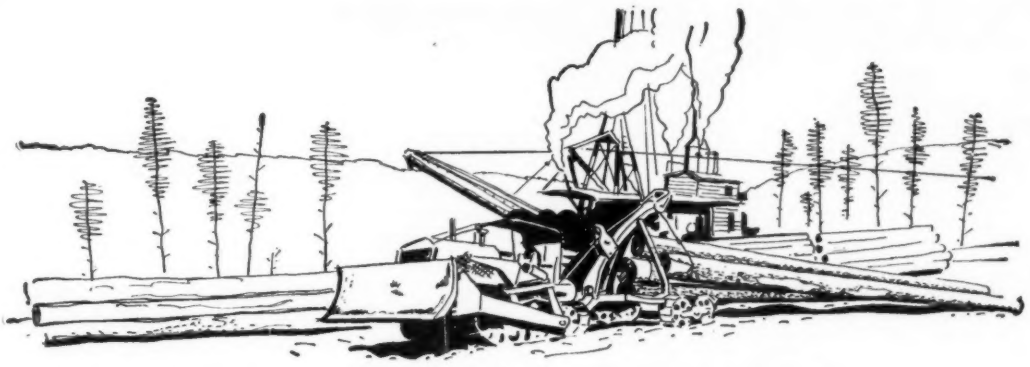
To help maintain the stability of the industry using national forest timber and the communities and jobs depending on it, the U. S. Forest Service on June 29 put into effect in the twelve principal timber producing states of the West a plan whereby the cost of national forest timber may be adjusted quarterly in accordance with fluctuating market prices.

The states in which the policy is effective are: California, Oregon, Washington, Idaho, Montana, Arizona, Nevada, Utah, New Mexico, Wyoming, Colorado and South Dakota.

The immediate effect of the plan will be to protect purchasers of national forest timber from being squeezed between the cost of the timber fixed by bid contracts and falling lumber prices. Without some such protection they face the possibility that their operations may be curtailed and unemployment and community welfare would be adversely affected.

Future Farmers Honor Virginia Forester

George Dean (center) Virginia state forester, named Honorary State Farmer by Future Farmers of America, is congratulated by Robert Stevens, Jr., FFA state president. Looking on is Robert N. Hoskins, Seaboard Railroad forester



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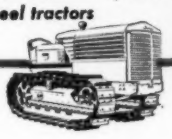


"THE SIGN OF EXTRA SERVICE"

LOGGING, by Nelson C. Brown. Published by John Wiley & Sons, New York. 418 pages, illus. Price $5.

A nationally famous forester and long professor of forest utilization at the New York State College of Forestry, Mr. Brown has revised his earlier work on logging and describes recent new mechanical devices. In fact, he has brought logging up to the present-day systems.

FOREST INFLUENCES, by Joseph Kittredge. Published by McGraw-Hill Book Company, New York. 394 pages, illus. Price $4.50.

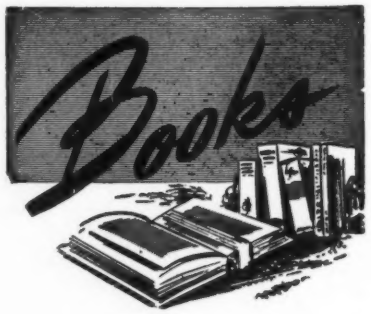
As professor of forestry at the University of California, Joseph Kittredge brings to his readers a new book, assembling for the first time widely scattered information on the value of forests and shrubs as a protective covering for the land. In short relationships of such important influences as climate, temperature, wind, rain, snow, transpiration, runoff, streamflow, floods and erosion are brought out with an important chapter on watershed management and the protection of forests.

ELEMENTS OF APPLIED HYDROLOGY, by Don Johnstone and William P. Cross. Published by the Ronald Press Company, 15 East 26th Street, New York. 276 pages, illus. Price $5.

The importance to engineers of a working knowledge of the "occurrence and movement of water upon and beneath the land areas of the globe" is stressed in this book. The authors dwell on flood control, pollution abatement, erosion control, irrigation and power and water supply as related to structures engineers are called upon to build.

THE FIG, by Ira J. Condit. Published by Chronica Botanica Company, Waltham, Mass., and Stechert-Hafner, Inc., New York. 222 pages, illus. Price $5.

A familiar fruit since Biblical times, the fig and its culture was never before thoroughly written up in one volume until Author Condit came forth with this book. The author also shares with the reader the results of his own study and research in California during the last thirty years. He makes first-hand observations about most of the fig districts of the world, discusses various varieties, propagation, products, marketing. In short, he has gathered all the essential facts about the fig and presented them in an interesting and helpful style.



THE PRUNING BOOK, by Gustav L. Wittrock. Published by Rodale Press, Emmaus, Pennsylvania. 172 pages, illus. Price $3.

Based on the experience of the author in an art as old as plants themselves, this book is a service to the amateur who desires to learn how to take care of his own plantings. The theory behind the art is a close following of nature's own methods so far as they can be adapted to man's desire in the finished product. The nine chapters deal with self pruning, principles of artificial pruning, root and top pruning, hedges, flower-bearing habits, fruit trees, vines and shrubs, evergreens and other plant groups.

THE STORY OF PLANTS, by John Asch. Published by G. P. Putnam's Sons, New York. 407 pages, illus. Price $5.

This is a unique and fascinating story for those interested in the life of plants. It is simply written, with a fresh approach which will be a relief from the dry and lifeless technique often employed in scientific writing. The author, son of the world-renowned Sholem Asch, has a background of wide experience which enables him to give a clear analysis of the atom, the elements of life in plants, soil and all nature. It is an accurate and thorough work.

MAINTENANCE OF SHADE AND ORNAMENTAL TREES (Second revised edition), by P. P. Pirone. Published by Oxford University Press, New York. 436 pages, illus. Price $6.50.

In its original edition this book became a staple volume in the working libraries of arborists, city foresters, park superintendents and tree wardens, and proved an invaluable handbook for the homeowner. This new, enlarged and revised edition contains all the material that made the early work valuable—and more. It brings up-to-the-minute information on new diseases, new pests and new methods to enrich what has been known as the most outstanding shade tree book published in the past thirty years.

A TEXTBOOK OF ENTOMOLOGY, by Herbert H. Ross. Published by John Wiley & Sons, New York. 532 pages, illus. Price $6.

Designed to bring together under one cover the fundamental aspects of entomology, this book is so organized as to give students a general idea of the entire subject. In addition to teaching entomology, the text traces the growth of the science. The keys to orders and families deal only with the more common insects. Thus the book is ideal for beginning students.

THE NATIVE TREES OF FLORIDA, by Erdman West and Lillian E. Arnold. Published by University of Florida Press, Gainesville, Florida. 212 pages, illus. Price $3.75 cloth bound, $3 paper bound.

This is an excellent guide to knowing the trees of Florida, complete with full descriptions and line-drawings of distinguishing characteristics. An easily usable key, with a minimum of scientific terms will enable the layman to find quickly any of the 175 trees and other woody plants described.

MARKETING PROBLEMS AND POLICIES, by Henry F. White. Published by the John Brown Press, Siloam Springs, Arkansas. 214 pages. Price $2.50.

This book deals with the features of cooperative marketing, its history, the workings of cooperatives and the services rendered to members, including the education of farmers in better marketing practices and the institutions and standards in the process of marketing.

DYNAMICS OF VEGETATION, by Frederic E. Clements. Published by H. W. Wilson Company, New York. 296 pages, illus. Price $3.75.

This is a compilation of selected writings on dynamic ecology by the late Dr. Clements, making available a number of his most important and out-of-print contributions as serviceable references and guides to agronomists, range men, biologists, foresters, general conservationists, teachers and students. The chapters deal with conservation and the application of ecological concepts and methods as they affect human environment and economics as well as plant communities. One hundred and forty-six photographs on sixty-nine full-page plates illustrate the many points.

New Forests for New Zealand

(*From page 9*)

petuation of the beech forest is the grazing of deer. Left to itself, and originally free from the depredations of animal life, beech reproduced abundantly wherever there was some light, while in full sunlight it grew at a rate comparable to the managed beech forests of Europe. But the English deer, which reach weights of 450 pounds, increased to unbelievable numbers, and it is feared that their continued existence will ultimately spell the doom of the beech.

Faced with growing scarcity of native timbers, New Zealanders looked about for exotic species to replace them. It must be remembered that east of the great range of mountains which extend along the westerly backbone of the South Island, with their glaciers and peaks up to 12,000 feet, the rainfall, intercepted by these heights, was insufficient for tree growth. The grassy plains to the east, built up since pleistocene times by torrents from the ranges, were exposed to hard winds against which the early settlers sought protection in planting windbreaks.

Eucalypts failed. Sitka spruce was exterminated by a scale insect and rot. Wattle from Australia was frozen to death or succumbed to a gall for which there was no cure. Monterey cypress did better but deteriorated on wet soils. But in the Monterey pine they found a tree that would survive and grow rapidly to windbreak size. Much initial planting for the same purpose was done around Nelson on very good forest soils, and in the North Island, to protect cattle from cold winter winds and rain.

This pine is found native at Monterey, California, in stands covering not over 25,000 acres. It was known as a fast-growing, short-lived tree, reaching 120 feet in height. In New Zealand it found a climate with a growing season of from nine to eleven months, instead of the shorter season and severe summer droughts of its native site. So instead of growing three feet a year in height, this exotic proceeded to put on a five-foot annual height growth and at fifty years reached 175 feet. Dominant trees not too crowded grew an inch a year in diameter. Yet the wood remains of a high quality, strong and durable against wear, and suitable for house construction and flooring.

As early as 1896 the state undertook to use this pine for reforestation, in a small way, and started state nurseries which by 1921 contained 24,300,000 seedlings. In that year the great expansion of forest planting began, due to the pressure on the state to provide work for unemployed persons. In the North Island area of volcanic activity around Roturua, there were great stretches of pumice soil deficient in cobalt, and considered unfit for animal husbandry. This deficiency of cobalt has later been remedied and this class of land is now considered agricultural.

But before this happened the most extensive planting project in the world was carried out and a total of 712 thousand acres was planted up to March 1, 1946, to exotic conifers, by far the largest portion of which was the Monterey pine, from seed grown in New Zealand. These plantations in the center of the North Island extend as far as the eye can see in three directions from a centrally located fire tower. The writer made a trip of 125 miles by car through planted pine, all of it now ready for cutting.

Private companies were formed and investors solicited for capital, until of the above total area, 310 thousand acres were privately planted. Not all of these plantations were successful, of course. But in the pumice soils of Roturua and the Moutere gravels of Nelson, and elsewhere, growth of this pine is so rapid that at thirty years it reaches a height of 140 feet, with yields, at thirty-five years, exceeding 60,000 board feet an acre.

On state plantations, the development of the stands has been so rapid that it has been impossible to find the labor or capital to make thinnings, and for the most part the trees still retain their lower branches and present a serious risk of crown fires. Pruning to eight feet in height would almost completely control this risk as the flames could not kill crowns and could be fought on the ground.

Due to greatly increased labor costs of planting, natural reproduction is hoped for as the means of regenerating these pine stands after cutting. On good sites, with bare soil, this has been successful. As it is, both state and large private industry are faced with a sudden huge mass of planted pine in need not merely of thinning but of final cutting, and capable, if efficiently handled, of giving rise to a large export trade, and they lack both the capital and labor to handle the problem. The developments in the

next ten years may be watched with great interest, and have a certain bearing on the relative efficiency of state versus private economic management.

While preponderant and undoubtedly the fastest grower where site is favorable, the Monterey pine is not the only important species of conifer that has been planted. Nearly everything has had a trial. In the North Island, in the kauri belt, loblolly and slash pines give great promise on "gum" soils, and grow densely enough to subdue the brush. Longleaf pine permits brush to grow and the ultimate success is more problematical. At Roturua, eastern white pine has shown rapid growth and good quality. Douglasfir gives great promise, and has exceeded the growth of the best stands in the Pacific Northwest by seventy to a hundred percent. Ponderosa pine shows great hardihood on exposed sites. European larch grows fast and is valued for its durability. The list could be extended to cover Corsican and Mexican pines, Monterey and Lawson cypress.

Mention has been made of the failure of eucalyptus species when used for forest planting on poor soils. This is matched by almost complete loss of all plantations of coast redwoods, only a few remnants of which survived. Another great loss was encountered in extensive plantations of tung trees. Not a single nut ever ripened, and the trees all died.

The State Forest Service is greatly concerned with efforts to perpetuate and reproduce the native forests, with beech in first place. As it stands, its forest practice is outstanding in the almost too successful substitution of exotic forests for the slow growing and difficult native species, which in their development had to acquire habits of growth that enabled them to survive in the fierce competition of a rain forest. Man, by destroying this forest, at the same time unconsciously created an entirely different set of conditions, consisting of bared soil, abundant light, and elimination of brush competition. This and the climate explains the great success attending the efforts to use conifers from the northern hemisphere, that could thrive only under these same conditions and would have been unable to compete in the undisturbed rain forest.

Smoke Jumper

(*From page* 14)

bail out over rugged terrain, frequently landing in treetops.

Carefully culled from an abundance of applicants, candidates for training, most of them between the ages of twenty and twenty-five, must be durable specimens. As the pictures on page 15 show, the training program at Missoula, Montana, is rigorous. Just how rigorous is indicated by the fact that paratrooper training during the war was patterned after smoke jumper methods. Today, many of the jumpers are former paratroopers.

Once they qualify, jumpers are assigned to eight-man squads. The three key bases are at Missoula, Portland, Oregon, and McCall, Idaho. When called to duty, squad members jump in pairs—learn to work together as a team. When he bails out, each jumper is equipped with a jump suit, crash helmet and mask, two parachutes, a coil of rope and a first aid kit. Fire fighting tools follow on auxiliary chutes.

Washington Lookout

(*From page* 5)

ing federal consent to the Northeastern Interstate Forest Fire Protection Compact. An outgrowth of the Maine fire disaster and general critical position of the New England States two years ago, the compact provides the framework for mutual assistance, joint mobilization of forces and equipment and common direction in the event of another emergency. Under the compact the U. S. Forest Service will represent the federal government. Contiguous provinces in Canada may join the compact with the consent of the U. S. Congress. Contiguous states in this country need no further approval. The plan becomes operative just as soon as it is ratified by any two or more of the states of Maine, New Hampshire, Vermont, Rhode Island, Connecticut, New York and Massachusetts.

Hoover Commission recommendations come a step nearer to realization with the passage of H.R. 2361 (Public Law 109, June 20, 1949). This is the basic reorganization act. No agencies are exempt from proposed reorganization. The President must submit his plans before April 1, 1953, and any plan takes effect within sixty days of continuous Congres-

sional session if not vetoed by either house of Congress. Immediately upon signing the legislation, the President submitted seven reorganization plans, none of which were concerned with the agencies handling the major resource conservation programs.

Legislative changes looking toward implementing the Hoover Commission recommendations are proposed in a brace of bills introduced by Senator McCarthy of Wisconsin. Two of these, S. 2055 and S. 2057, provide for changes in law applicable to the Departments of the Interior and of Agriculture, respectively.

The Key That Is Made of Wood

(*From page* 23)

tention of the farmer-conservationist. In fact, the right management of existing woodland areas on farms is, in many cases, the key to farm prosperity. Yet in spite of much effort, talk and volumes of literature, relatively few farmers have seriously undertaken to practice forestry. Wood is a crop, and good management can produce a worthwhile annual crop that will bring many farms out of the submarginal into the productive class.

A trip from Chicago south through Illinois would be a good prologue to a discussion of the impact of forestry on farm economy. The first two-thirds of the trip crosses the original prairie. Farms are large. Broad fields of waving corn are the controlling features of the landscape. Smaller fields of grain, hay and pasture are interspersed. Heavy machinery and tractors are evident everywhere. Trees are seen clustered around the buildings, as hedgerows dividing the fields, as occasional plantations of post timbers, or as picnic groves. The only natural stands are along a few of the watercourses. The rest were planted. Here farming is big business. There is little land chiefly adapted to growing wood.

Then suddenly the scene changes. The traveler is out of the prairie country and into the woods. Farms are smaller; fields are on gently rolling to steep lands. These farms were carved out of the woods and after 150 years of occupancy, a substantial acreage of wooded land remains. Unused, badly eroded fields begin to appear. Farm buildings show signs of wear. The traveler, as he goes on south, does not need to be told that he is in a country where farming is not big business, but a struggle to earn a livelihood. The country gets rougher and more wooded and instinctively, if he has read the statistics, our traveler knows that many of these farms are part of that million that the Department of Agriculture mentioned as constituting the "toughest problem."

Southern Illinois is a wonderful timber growing section. There is a national forest here made out of poor farms. There is similar farm country throughout the United States. Almost anywhere in New England, New York and along the foothills of the Appalachian Mountains south to Georgia, the wilderness retains the evidence that farmers cannot prosper if farm economy does not include a forest crop. Ancient stone walls that once marked the line between cultivated fields still stand in the new-grown forest—mute evidence of the failure of pioneer farms in territory where the land is chiefly suited to forest crops. Remnants of foundations of farm buildings and occasional fruit trees and lilac bushes still survive to proclaim the site as one where a farmer tried and failed.

Not all of these wilderness farms could have been successful under a different agricultural philosophy — but many of them could. A balance of soils suitable for cultivated crops and pastures, with those chiefly valuable for forest trees is essential. Farmers must have cultivable and pasture land, but in the "back" country they cannot escape the forest land. Failure to accept and farm the latter for the only crop it permanently can produce means failure of the whole undertaking. The record is plainly written.

Those thousands of farms succumbed to the wilderness because they failed to take in the forest as a partner in the enterprise. Their history is being repeated today on other thousands of farms. Not so long ago I visited a pioneer farm community in northeast Washington. Sixty percent of the farms were rough hills covered with larch, fir, cedar and pine; forty percent were on gentle terrain, often bottomlands. Farmers and agricultural teachers were concentrating on the latter, trying to produce a satisfactory farm income from only forty percent of the farm land.

Why neglect the sixty percent? Is our agricultural philosophy so hidebound that it refuses to accept the lesson of history? Why try to work out a conservation program on only forty percent of the land? An enduring agriculture cannot be built on a farm that does not pay the farmer a satisfactory income. In the long pull,

such farms cannot pay their way unless farmers learn to grow, manage and market wood as a farm crop.

In the coastal plain country of southern Arkansas and northern Louisiana, farmers, led by enlightened agricultural teachers, now seem to recognize the lesson of history. Farmers are learning that clean cutting the forest does not pay. They are beginning to farm their woods, getting a regular annual income to supplement that from cotton and livestock. The futile attempt to make cotton or pasture land out of much of the land where loblolly pine grows seems to have been halted. Agriculture here, where wood is included as a farm crop, seems to be on a firm foundation.

The nation needs the timber products of the farm woods. Farmers need the income from the woods, particularly those in the "low income" group. Let's see what the effect of good forestry practice could be on the farm problem.

The Department of Agriculture has said that the farm woodlands of the nation are producing not more than a third of the wood volume they could produce if even reasonably well managed. Lack of management has left them with a large percentage of low-grade products. Several years ago the department estimated that farmers were losing a potential income from woodlands of $500,000,000 a year. It easily could be $750,000,000 now. That would finance a good farm conservation program and leave a tidy balance to raise the standard of living.

These are the overall figures. There is ample evidence that well-managed farm woodlands will produce gross annual incomes of at least $15 to $20 an acre under the same conditions that other farm products are sold. In the case of wood products it would be processed fuel, posts, logs, poles, or pulpwood.

What would an additional income of $15 an acre do for the million farms referred to by the department as the "toughest problem"? It could easily double their gross income. It could raise the income of a great many other farms by ten percent or more. The poorest farms are most likely to be those where the largest farm acreage remains in woods. The ill-founded agricultural tradition that a farmer's product always must be livestock or a cultivated crop has blinded farmers to the very real opportunity to grow wood.

Forestry as an accepted farm activity would remove the temptation to clear the timber from millions of acres of land capable permanently of producing only a wood crop. The wasted efforts in trying to grow grain, grass, or row crops on land inherently incapable of that use can be stopped only by adding wood to our list of standard agricultural crops. Of course, profitable crops of wood are the result of careful management of woodlands. Forestry cannot work a miracle; it has no magic wand. The transformation would require twenty or more years, but it would permanently improve the agricultural situation. It would stabilize farm economy. It would put a foundation under the farm conservation program that it now sadly lacks.

The key to an enduring agriculture in America is made of wood. It must be used to unlock the agricultural tradition that limits the farmers' crops. A new philosophy must be woven into agricultural lore so that our farm land can be made to produce to capacity and each acre used in accordance with its needs and capabilities. Farmers must produce more and more, but they must do it as conservationists. They must leave the productivity of the land unimpaired for the use of succeeding generations. They must build an enduring agriculture. The American people are ready and willing to help farmers to do that. Farmers must not fail; our agricultural teachers must not fail. Their first responsibility is to save the land. It can be done, but only if the farm woodlands are included in agricultural programs of productivity and conservation.

Trees That Beat the Blizzard

(*From page* 27)

near O'Neill, to haul hay from his stacks. This belt extends westward from the farmyard, and the conifer row is second from the northern side. The snow piled up considerably in the shelterbelt, but it was deeper to the south of it and extended out about 120 feet. Beyond that, however, the snow wasn't drifted and Mr. Ernst was able to haul hay in a farm wagon.

Mr. Ernst's neighbors had to go to the expense of having trails to their haystacks opened repeatedly, and when snow-moving equipment was not available, the livestock went hungry. One of these neighbors is Otto

Lorenz, at whose place measurements were made of snow accumulated in the farmyard. Not protected by an adequate windbreak, his buildings were almost buried by snowdrifts.

Mr. Lorenz was impressed. He has since asked the Holt County Soil Conservation District for the aid of Soil Conservation Service technicians in developing a complete farm conservation plan. It will include a ten-row farmstead windbreak and shelterbelt.

Not all shelterbelts were beneficial, however. For example, along Highway 20, just west of Royal, is what appears at first glance to be a thoroughly satisfactory ten-row belt. Yet it was responsible for a drift across the highway that on March 2 still measured six feet deep at the edge of the cut the rotary plow had made through it. Investigation revealed this planting has no shrub row to plug the space from the ground up to the tree branches. Thus snow could sift through the planting and accumulate on the highway.

Adjoining this shelterbelt at the west end and also paralleling the highway is another of the same width, but with a tight shrub row on either side. This second planting permitted little snow to reach the highway.

Neither did a two-row planting of boxelder and American elm and a snow fence within seventy-five feet of the tracks help matters for the Chicago, Burlington & Quincy Railway between Orchard and Royal. About all they did was contribute to the formation of a six-foot drift that covered the whole right-of-way. Along the same line, west of Orchard, a ten-row shelterbelt that had no shrub row dumped twelve feet of snow on the tracks.

Altogether, in the thirty-five Nebraska counties which were so cruelly lashed by the last winter's blizzards, there are 8,279 miles of farmstead windbreaks and shelterbelts over five years old that the Prairie States Forestry Project and the Soil Conservation Service helped the farmers establish.

The performance of the plantings studied compels the conclusion that a properly designed farmstead windbreak or shelterbelt — wide enough and with good shrub rows bordering it—could stop anything that this worst of all winters had to offer, once the trees had attained reasonable growth. Such plantings kept farmyards and travel lanes open, and saved livestock and buildings from severe buffeting by winds. It is safe to say that these tree plantings saved the lives of many head of livestock, and possibly of a few people.

And on the Edmisten farm it was demonstrated that a well-designed pattern of shelterbelts can keep whole areas quiet. Even in this year, the snow lay pretty nearly where it fell on this farm.

Furthermore, these tree plantings assumed a role of importance in the conservation of water and control of runoff. Measurements of snow depth and water content that are now available make it possible to estimate authoritatively the total accumulation on the farms protected by those 8,279 miles of farmstead windbreaks and shelterbelts. This amounted to 431,512 acre-feet of water. Since the first blanket of snow was laid quickly, before a freeze, nearly all of the drifts in the tree plantings lay on ground that was free of frost.

On February 24, with the first signs that a spring break-up was approaching, the Holt County *Independent* heralded "New Disaster Unit Formed by Red Cross for Possible Elkhorn Flood." As it turned out, flooding along the Elkhorn River was fairly mild despite the record snowfall on its watershed. Weather played ball with the people, alternately freezing and thawing. But we like to think that the farmstead windbreaks and shelterbelts also helped a great deal to ease the flood situation.

Plan to attend the National Shade Tree Conference, Baltimore, Md., August 22-26, and the American Institute of Park Executives Convention, Detroit, Mich., September 20-23.

Pattern for Human Conservation

(*From page* 21)

"we'll raise the company's ante to half a million dollars. Now you people get busy and match it."

The community matched it and then some. In a whirlwind campaign in which every individual in town contributed something, the community oversubscribed its quota by $150,000. The campaign was spearheaded by a special service group made up of representatives from eighty-five civic, fraternal and church organizations. The average contribution was a week's pay to be taken out of pay envelopes over a three-year period. There was no sandbagging. Weirton people gave because they wanted to.

Work on the proposed one and a half story structure will probably start this fall. Designed by John J. Rietz, of Steubenville, Ohio, the center will feature a lounge that will be the central meeting place for the town; a gymnasium with folding bleachers and a stage; a swimming pool; a library, dining room, kitchen, two handball courts, exercise room, lockers and a youth center for teen-agers.

A special feature will be a gym and all-round recreation center for pre-school children. "They need a place to play, too," Corll explains.

The community center will be the newest link in what is already an attractive recreation layout consisting of ten playgrounds, the Weirton Christian Center and the Margaret Manson Weir Memorial Park. In driving around the greater Weirton area one notes numerous softball and baseball diamonds. Asked to explain what appears to be an unusually large crop of diamonds and little picnic groves, some of them tucked away in rural areas, John A. Jones, editorial director of the *Weirton Steel Employees Bulletin*, replied, "Steelworkers are very active people. When they relax they require vigorous exercise. And it takes a lot of diamonds to provide all the various groups with a place to play."

The new community center will be the headquarters for this system of parks and picnic areas. The program will be headed by Dave Frew, formerly a school superintendent, chairman of the Weirton District Boy Scouts and the first president of the Weirton Service Council. Corll, who gravitates into positions of community responsibility in his capacity as industrial relations manager, is now serving as president of a seven-member board looking after community center plans.

How an industrial relations manager operates at Weirton Steel sheds considerable light on why the plant is a good place in which to work and the community a pleasant place in which to live. Take, for example, the time President Millsop called Corll to his office for the interview about the Weirton Male Chorus that resulted in the industrial relations manager entering the field of music.

"Ray," President Millsop said without preamble, "I want you to take hold of this chorus and make something of it. It's a good thing and I want you to promote it."

"But, boss, I don't know anything about music," Corll, a former professional ball player protested.

"You take hold of this chorus and promote it," President Millsop repeated firmly. "You can do it."

That was how Corll found himself with thirty-five singing millmen on his hands. But once he heard them sing he decided that President Millsop might have something there. A short time after that, he booked his protegés into Billy Rose's Diamond Horseshoe where these men from the open hearth, tin mill, sheet mill, electrical and police departments and pipecovering section made a hit.

A five-dollar bill to a doorman paved the way for Corll into Fred Waring's dressing room and an appearance on the Waring radio show.

"You say they work in a steel mill?" Waring said doubtfully. Nevertheless, he booked the chorus and the country was given its first opportunity to hear what is undoubtedly one of its best male choruses.

But perhaps the most unusual engagement of the chorus was its appearance in Grand Central Station, New York. The appearance was a must once Corll was advised that 100 thousand people pass through the terminal between the hours of five and six every evening. Deploying his chorus on the balcony overlooking the main floor, Corll unfolded a banner labeled "The Weirton Steel Male Chorus" and told the boys to strike up. The millmen lifted their voices in song and New Yorkers surging through the station on their way to suburban trains were given something different to talk about at dinner that evening.

Weirton's policy was at its best in helping to rehabilitate 4,000 veterans who returned to their old jobs after the war. During the war plant officials kept in close touch with their fighting men, writing thousands of letters to the boys in all parts of the world.

When they came home most of them quickly adjusted themselves to the old groove. With others it wasn't so easy. Patience was the keynote here. One veteran was shifted to eleven different jobs in an extreme effort to get him re-established in the civilian mold.

The result of these efforts to treat people right has been epic production. Weirton people work hard and the key example of this is President Millsop himself. Ordinarily, running a steel company would be enough job for one man. But Millsop was persuaded to become mayor of Weirton and took the job because he had a sincere desire to help put the newly-incorporated town together.

His right hand man in this venture into the realm of municipal affairs is Dan Sweeney who was pulled out of the plant to serve as Weirton's first city manager. So far the young administration, operating in the black on a $347,000 budget the first year, has erected 217 street lights, put in twelve miles of paved streets, inaugurated a garbage collection system, put on a full-time recreation director, incorporated a $726,000 municipal water works and filtration plant, and installed additional sewerage disposal facilities.

Right now plans are afoot to build a $3,000,000, 125-bed hospital with designs already approved by the Surgeon General and the State Health Department. At present, townspeople use the emergency hospital at the steel plant, have to go out of town for operations and general hospital care.

These are a few samples of the type of progress being made at Weirton today. Gradually the principal architects of this humanitarian policy are evolving a program that is applying sound conservation principles to all age groups—almost from the cradle to retirement. Weirton tots will have their place in the new community center. Other age groups have the entire gamut of Weirton recreation facilities at their disposal.

And when Charlie Price, of the tin mill department, decided he was ready to quit after twenty-six years on the job, he was able to do so in comfort—thanks to the company's retirement annuity plan. Thousands of other Charlie Prices have been able to do the same thing.

True, this has all cost the steel company a lot of money. But the dividends accruing from these investments—this business of "treating people like people"—have been considerable, too. It is indeed an enviable thing when a big corporation has the good will of an entire community and can boast a production unmarred by stoppages and slowdowns.

All which harks back to the theory that a little conservation sometimes goes a long way in making an industrial town a better place in which to work and to live.

Partnership in the Woods

(From page 17)

professional secrets in his recommendations. They were common sense measures, based upon a knowledge of standing trees and of markets in the area. A brisk demand for mine props made it economically possible to salvage a quantity of badly fire-scarred young timber, selecting these here and there throughout the stand on an individual basis. Large defective black oak was marked for ties and sawlogs. A few scattered, limby white oak produced logs and barrel-stave material. The forester helped locate markets and the timber was sold standing on the stump, on a marked-tree basis. Mr. James paid to the state a yield tax based on four percent of the stumpage value of the cut.

This improvement cutting program has been continued on the property, planned now by Mr. James, but with continuing technical advice from the forester. Approximately 85,000 board feet of material have been cut. And the operation has more than paid its own way, although it is justified strictly as forest improvement. A small quantity of shortleaf pine seedlings, secured at cost from the state, have been planted in open areas suitable for their development.

The boundaries of the property are posted "FOREST CROP LAND." This, and the fact that he may request the state's help in gathering evidence for the prosecution of timber trespass, gives the owner added assurance against theft.

Mr. James, and his counterparts in every section of the state, have truly entered into a partnership undertaking with the state. Specific aids secured by their participation include forest management advice and individual, on-the-ground assistance; aid in preventing and prosecuting timber trespass; the partial deferment of annual taxes during a period of years designed to allow the accumulation of growth, building up the forest toward an eventual return to economic production.

General aids also given Mr. James, but available to any class of ownership, include publicly-financed forest fire control and tree planting stock at cost.

Rightly may Mr. James state: "It's good to have some help now."

Saturday Knights

(From page 29)

class coals. The big pine chunks are held back until supper is out of the way and there is a need for a good blaze and some heat.

Unless there is a safe padding of snow on the ground, each man takes a half gallon canteen of water in his knapsack, most of which is saved for dousing the fire.

Weather alone has never suspended activities. Even in 1913, when a three-foot snow blanketed the region, the men bucked a trail to the nearest cave and brewed up the customary potation of java.

The pleasure of the Saturday Knight hikes is divided almost equally between walking, eating and talking, but it is the last that has the edge. Part of it is serious discussion, touched off by a piece of news or a startling opinion. Tailor-made jokes play a little part, but more of the fun comes from the body of humor that grows up in any group of men who meet regularly.

Not the least important feature of the organization is its freedom from promotionalism. When all the other forty-nine clubs a man belongs to are busy accomplishing things, he may rate one that offers nothing but a deep satisfaction for those who belong to it.

AUTHORS

ARTHUR H. CARHART (*Bad Medicine for the Rio*) is nationally known Denver writer and conservationist. H. H. CHAPMAN (*New Forests for New Zealand*) is professor emeritus of forest management at Yale University. ARTHUR B. MEYER (*Partnership in the Woods*) is assistant state forester of Missouri. JOHN F. PRESTON (*The Key That Is Made of Wood*), farm forestry authority, was former chief forester of Soil Conservation Service. ROSS WILLIAMS (*Trees That Beat the Blizzard*) is also an SCS forester, heading up the regional forestry office at Lincoln, Nebraska.

This Month With The AFA

AFA Board of Directors, meeting in Washington, D. C., on July 12, took the following action:

Opposed the Anderson Bill (S. 1820) for public regulation of cutting practices on private land (see "Washington Lookout" in AMERICAN FORESTS for June), and reiterated its previous conviction that control of timber cutting should be worked out on a state basis.

Appointed a National Advisory Committee to advance its program for American forestry. This action was recommended by the Committee on State Cooperation which the Board appointed at its April meeting, naming representatives of three state forestry associations, the U. S. Chamber of Commerce, the American Forest Products Industries, the Society of American Foresters and The American Forestry Association as committee members.

Approved plan for AFA Conservation Award, including five awards to be made at the annual meeting in October.

State forestry association executives met at Wananish, North Carolina, on June 27 and 28, for a conference called by the AFA's Committee on State Cooperation, with the North Carolina Forestry Association acting as host. So beneficial was the conference in serving as a clearing house on state forestry association problems of membership, finance, programs and activities, that the ten executives present have formed a Council of State Forestry Association Executives to perpetuate these benefits through establishment of an annual meeting.

Officers elected by the Council were Harris A. Reynolds, Massachusetts Forest and Park Association, president; Harry S. Mosebrook, West Virginia Forest Council, vice-president; and William S. Edmunds, North Carolina Forestry Association, secretary. The Committee on State Cooperation has recommended that this council be recognized as the clearing house for all assistance to the states wherever possible, and as an effective means of translating the AFA program into local action.

In a letter of thanks to AFA for bringing the executives of state forestry associations together, Harris Reynolds writes: "I believe that this organization can have a tremendous influence on the conservation movement by simply ironing out our own problems and coming to an agreement on national and state policies."

A delegation of the nation's top business executives attended a luncheon given by The American Forestry Association on June 28, at the National Press Club in Washington, honoring American business for its advertising support in the fight against forest fires through a public service campaign sponsored by The Advertising Council. The program, arranged as a "Salute to American Business," was staged by the federal and state forest services.

A special feature of the event was the parachuting of a team of U. S. Forest Service smoke jumpers, from Missoula, Montana, to the scene of a simulated fire near the Washington Monument. The smoke jumper demonstration, first of its kind east of the Mississippi, was televised throughout the East and witnessed by the luncheon guests on screens set up for the occasion.

Upon completing their jumps, the smoke jumpers were escorted to the luncheon, where they presented special citations to Charles E. Wilson, president, General Electric Company; Lee H. Bristol, president, Bristol-Myers Company; J. Spencer Love, chairman executive committee Burlington Mills Corporation; A. Craig Smith, vice-president, Gillette Safety Razor Company; Orren E. Dunlap, Jr., vice-president, RCA; and H. Fred Willkie, vice-president, Joseph E. Seagrams & Sons, Inc.

Congratulations to Shirley W. Allen, professor of forestry, School of Forestry and Conservation, University of Michigan, who was honored at Iowa State College Alumni Day ceremonies in June, receiving the Alumni Merit Award given by the Iowa State College Alumni Club of Chicago. The award has been bestowed annually since 1932 upon outstanding alumni for meritorious service in their fields and contributions to their fellowmen. Before becoming associated with the University of Michigan in 1928, Professor Allen served as AFA forester.

From Benjamin P. Groves, chief of the Refuge Section of the Office of Military Government for Bavaria, comes a letter which is herewith condensed for consideration by our members:

"A steady stream of refugees continues to come in illegally from beyond the Iron Curtain and, in Bavaria alone, 100,000 men, women and children are now forced to live in primitive barracks. The plight of the 25,000 children among them is particularly sad. They are almost entirely devoid of recreational equipment.

"The Office of Military Government for Bavaria has taken upon itself to collect games, toys, books and clothes for these pitiful little postwar victims. Our project is based on voluntary donations of the friends and relatives of Americans here and the generosity of organizations such as yours. All donations are used to equip game and recreational rooms in the refuge camps. Donations should be mailed to Benjamin Groves, Refuge Section, OMGB, APO 407-A, Care Postmaster, New York, New York."

The month's mail brought the following message from Arthur A. Schuck, chief scout executive of the Boy Scouts of America:

"At the Annual Meeting of the National Council of the Boy Scouts of America recently held in Boston, a resolution was adopted expressing the thanks of the Boy Scouts of America for the cooperation of The American Forestry Association during the past year.

"The program of The American Forestry Association is closely related to the outdoor program of the Boy Scouts of America. Members of your organization have been very helpful to us nationally and to our local councils throughout the country, and we appreciate it very much."

We hope AFA members singly and collectively will continue to support the Boy Scout movement in every way they can, for the two programs are indeed closely related and the younger generation should at all times be encouraged to follow Boy Scout standards in their use of the outdoors.

S. L. F.

EDITORIAL

Let's Get Off the Merry-Go-Round

Among the things we would like to abolish is perennial debate on whether or not conservation goals can be achieved in this country by the democratic process of education. Aside from its obvious effect on a united front in approaching our increasingly important forestry and related land-use problems, indications are beginning to accumulate that this energy-sapping merry-go-round of words is slowing down the conservation machine.

Briefly, here is the situation. Proponents of the educational approach insist that not only can it succeed, it is succeeding. They point out that public awareness of the need for sound conservation policies and practices has increased enormously over the past quarter century, that this is reflected in outstanding gains in conservation progress, particularly at the state level. This, they maintain, is the fruit of education.

Critics, on the other hand, are unwilling to admit these gains are as significant as they might have been under another process, namely, compulsion by law or decree. They contend further that conservation education has reached the point of diminishing returns, that even if this were not true individual attitudes, when given the choice, can change overnight under economic pressure.

Paradoxically—and another argument for abolishing debate—these viewpoints are not as far apart as they appear. There is an important element of truth in each of them. Of course, education alone will not insure the success of any movement, even though its purpose is to serve humanity. If this were not so, generation upon generation schooled in the Ten Commandments would most certainly have spared the world the agony of the past decade. Nor can the power of law by legislation, proclamation and other forms of compulsion—in this country at least—win for any cause the popular support it must have to succeed. The simple truth is that both education and a degree of compulsion are needed—education to propel the conservation machine, controls to stabilize it.

If we face this situation squarely, it becomes obvious there is no longer need to ask what education can do for us. It is more to the point to ask what kind of education—and how much—is necessary to get the nation solidly back of the national conservation effort. And the first step in this direction is for all parties concerned not to confuse education with propaganda or the promotional type of press agentry.

The importance of this is graphically illustrated by findings of the conservation education survey made by The American Forestry Association a little more than a year ago. This study revealed that twelve states place *major emphasis* in their educational programs on newspaper publicity, while eleven others ranked it very near the top. To repeat, *twenty-three states out of forty-eight rated newspaper publicity their number one or number two educational activity.*

As against this, such proven education mediums as youth education, teacher education, visual education including motion pictures for school children and adults, and demonstrations received top rating in the educational activities of less than a dozen states.

Now add the fact that much of the "educational" material reaching the home as well as the schoolroom comes from propaganda or promotional agencies, and you have a rough idea of why the pointless merry-go-round of words on whether or not the educational process will work for conservation should be abandoned. In its place we should substitute the more vital job of determining who should be educated and where—and then turn on the broad light of knowledge with all the power and craftsmanship at our command.

Considering the progress already made—think what would happen if we would stop playing around with an idea and turn the full force of educational methods on conservation problems.

Portrait of a Trail Rider

"From my summit rocks, I could feel the impact of all wilderness beauty. In the great circle around me are a multitude of things with which I had intimately interacted. The canyon bottom just below the westward reaching shadow of my mountain—I crossed the river down there, leaping from one foam-lapped boulder to another. And that ridge that is almost a blur on the low North sky—I climbed over it, inching my way up and down its sides. . . .I drank the swift-coursing waters and fished out their squirming trout.

"Each moment of my wilderness life has been a moment of close companionship with some one of the particulars of this scene. Together, these moments are a thread which links all of the particulars and so gives the scene a soul—this same deeply-breathing soul which feels itself so intensely at this mountain top moment. I know now that I am not small. I know that I am as large as my surroundings—yes, as large as the wilderness itself."

These words from Richard Olson, of Los Angeles, are being restated with variation these hot summer days as 250 members of The American Forestry Association's Trail Riders of the Wilderness spread out in fifteen separate expeditions, a record number, in many corners of wilderness America.

And for ten days to two weeks "the deep forest and snow-topped mountain, the wide valley and narrow canyon, the wind and cloud and the music of the river—these concrete things offer greater hope to man than the sum of all of history's political manipulations."

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